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Lupus or not? SLE Risk Probability Index (SLERPI): a simple, clinician-friendly machine learning-based model to assist the diagnosis of systemic lupus erythematosus

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ABSTRACT

Objectives Diagnostic reasoning in systemic lupus erythematosus (SLE) is a complex process reflecting the probability of disease at a given timepoint against competing diagnoses. We applied machine learning in well-characterised patient data sets to develop an algorithm that can aid SLE diagnosis.

Methods From a discovery cohort of randomly selected 802 adults with SLE or control rheumatologic diseases, clinically selected panels of deconvoluted classification criteria and non-criteria features were analysed. Feature selection and model construction were done with Random Forests and Least Absolute Shrinkage and Selection Operator-logistic regression (LASSO-LR). The best model in 10-fold cross-validation was tested in a validation cohort (512 SLE, 143 disease controls).

Results A novel LASSO-LR model had the best performance and included 14 variably weighed features with thrombocytopenia/haemolytic anaemia, malar/maculopapular rash, proteinuria, low C3 and C4, antinuclear antibodies (ANA) and immunologic disorder being the strongest SLE predictors. Our model produced SLE risk probabilities (depending on the combination of features) correlating positively with disease severity and organ damage, and allowing the unbiased classification of a validation cohort into diagnostic certainty levels (unlikely, possible, likely, definitive SLE) based on the likelihood of SLE against other diagnoses. Operating the model as binary (lupus/not-lupus), we noted excellent accuracy (94.8%) for identifying SLE, and high sensitivity for early disease (93.8%), nephritis (97.9%), neuropsychiatric (91.8%) and severe lupus requiring immunosuppressives/biologics (96.4%). This was converted into a scoring system, whereby a score >7 has 94.2% accuracy.

Conclusions We have developed and validated an accurate, clinician-friendly algorithm based on classical disease features for early SLE diagnosis and treatment to improve patient outcomes.

INTRODUCTION

Diagnosis of systemic lupus erythematosus (SLE) can be challenging and delayed by several months or years,^{1–3} resulting in increased patient uncertainty, referrals and healthcare utilisation.⁴ Delays

Key messages**What is already known about this subject?**

► Systemic lupus erythematosus (SLE) diagnosis often poses significant challenges especially at early stages and formal diagnostic criteria are currently missing.

What does this study add?

- By the use of machine learning (Least Absolute Shrinkage and Selection Operator-logistic regression) training of well-defined features of SLE, including features that are not part of the classification criteria, derived from a large discovery cohort, we have developed a novel statistical model for SLE diagnosis.
- The new model, including 14 variably weighed, standard clinical and serological features, can produce individualised SLE risk probabilities enabling the classification of a validation cohort into unlikely, possible, likely and definite SLE.
- When treated as binary (ie, SLE or not SLE), the model shows excellent combination of sensitivity and specificity for SLE (including early and severe forms of the disease) against competing rheumatologic diseases.
- The logistic regression model can be converted into a simple scoring system for both clinical and serological features, with an operational cut-off score of 7.

How might this impact on clinical practice?

► Pending further validation in prospective studies, the new diagnostic model (SLE Risk Probability Index) can assist the early diagnosis and treatment of patients with SLE to improve disease outcomes.

in diagnosis and treatment initiation have been linked to increased flares and organ dysfunction.^{4–6}

SLE diagnosis often relies on the acumen of physicians and is typically elicited by the presence of ‘high-yield’ features or multiple, although less-specific findings. Due to absence of diagnostic criteria, classification criteria, developed to facilitate the inclusion of homogenous disease populations in clinical

studies,⁷ are commonly used as a diagnostic aid. The Systemic Lupus International Collaborating Clinics (SLICC)⁸ and European League Against Rheumatism/American College of Rheumatology (EULAR/ACR)^{9,10} criteria enable the earlier classification of increased number of patients.¹¹ Moreover, the EULAR/ACR 2019 criteria achieve the highest combination of sensitivity and specificity.^{9–11} Improved classification has not remedied the challenge for diagnosis especially at early stages.^{11,12}

Artificial intelligence tools based on machine learning (ML) are increasingly used to manage difficult medical tasks. Such models can be trained from different kinds of medical or biological data.^{13,14} ML has been used for the molecular classification of inflammatory myositis¹⁵ and rheumatoid arthritis,¹⁶ for predicting mortality,¹⁷ response to biological agents¹⁸ and disease activity,¹⁹ whereas less effort has been directed towards diagnosis.^{20,21} Building robust computational models that avoid excess complexity represents an important challenge.^{14,22}

Herein, we applied ML on panels of clinical features aiming to construct a model that can accurately detect SLE against competing rheumatologic conditions. We used a discovery cohort of patients with SLE or control diseases to train two standard ML algorithms, namely, the Random Forests (RF) the Least Absolute Shrinkage and Selection Operator (LASSO) followed by Logistic Regression (LR). RF is a non-linear method with high complexity and thus, less explainable, whereas the LR is a linear method supporting simpler, more clinically interpretable results.²³ The best model selected by internal cross-validation (CV) was further evaluated in an independent validation cohort. Through this process, we developed a novel, simple Least Absolute Shrinkage and Selection Operator-logistic regression (LASSO-LR) model of variably weighed, standard clinical features that can produce individualised SLE risk probabilities alike clinical diagnostic reasoning. Our model had excellent accuracy for SLE, including early and severe forms of the disease, therefore it could represent a useful clinical tool.

METHODS

Discovery and validation cohorts

We used data from the Rheumatology Clinics at the University Hospital of Heraklion and the 'Attikon' University Hospital, Athens. Both centres have established SLE registries and use homogenised, structured forms for collecting clinical characteristics (including classification criteria), use of treatments and disease outcomes.^{11,24–26} We included patients diagnosed during 01/2005–06/2019 with SLE or miscellaneous control rheumatological diseases that are relevant to the differential diagnosis of lupus (online supplemental table S1) by consultant rheumatologists with ≥ 5 years clinical practice. A randomly selected discovery cohort of 401 patients with SLE and 401 controls were used to construct, train and compare the ML models. The balanced (1:1) ratio of SLE and controls helps to minimise any predictive modeling biases. An external validation cohort of consecutively registered 512 patients with SLE and 143 controls was used to provide an unbiased estimate of the diagnostic accuracy of the best model. The study was approved by the local ethics committees.

Variables and data set preparation

For each patient, demographics, rheumatological disease and date of diagnosis, date of earliest reported occurrence of each of the items from the three classification criteria (ACR 1997,²⁷ SLICC 2012,⁸ EULAR/ACR 2019^{9,10}) and date of last follow-up visit/assessment were extracted. Attribution of the criteria items

to SLE or not was arbitrated by rheumatologists (DTB, GKB, AF) using the EULAR/ACR attribution rule.^{9,10} We used criteria items both in their original version and after deconvolution into subitems (eg, 'maculopapular rash' subitem from the EULAR/ACR 2019 'acute cutaneous lupus' criterion). In addition, we monitored a predefined list of non-criteria features (online supplemental table S2). Missing data were eliminated through vigorous charts review and quality control.

Disease subsets and outcomes

Early SLE was defined as duration less than 24 months since diagnosis. Lupus nephritis was determined according to kidney histological findings suggestive of lupus in a patient with compatible clinical and/or serological findings. Neuropsychiatric lupus was diagnosed through multidisciplinary approach²⁸ and ascertained by the Italian Study Group attribution model.²⁹ The British Isles Lupus Assessment Group (BILAG) glossary³⁰ was used to classify the severity of manifestations as previously detailed.^{11,26} Use of immunosuppressive/biologic treatments and the physician global assessment of disease severity were also collected. The date of each item of the SLICC/ACR damage index (SDI)³¹ was monitored.

Feature selection, model construction and evaluation

We followed two approaches for developing a predictive model for SLE. First, we combined each one of the three classification criteria with additional, non-redundant features from the other two criteria sets and with non-criteria features; second, we developed a de novo model based on clinical variables selected from the three classification criteria and non-criteria features. Univariable LR (online supplemental table S3) was performed in the discovery cohort to determine the association of each individual feature with SLE and correlation analysis (online supplemental table S4) to detect collinearity between features/predictors and assist clinicians in the construction of feature panels. Clinicians (GKB,CA) created 20 panels of features with the aim to introduce alternative feature versions. Each panel was submitted into two ML algorithms for feature selection, namely, RF and LASSO, the latter followed by LR (figure 1). Details are provided in the online supplemental methods.

We performed a 10-fold stratified CV process (division of the dataset into 10 folds of near-equal size without resubstitution) to construct and compare the 40 multivariable models for their predictive capability. Each fold (10%) was used as a test data set to determine the model performance, while the remaining nine folds (90%) were used as the training data set for the model construction. We evaluated the following metrics (averaged from the 10 CV test data sets): sensitivity, specificity, accuracy and area under the receiver operating characteristic curve (AUC-ROC). The model with the highest accuracy was selected as the best to undergo evaluation in the validation cohort.

Statistical analysis

The Kruskal-Wallis analysis of variance was used to compare means and the χ^2 test to compare proportions. To convert the LASSO-LR model into scoring system, regression coefficients were divided by the smallest coefficient followed by rounding to the nearest 0.5 value. Statistical analyses were performed using the R software (V.3.5.1) and SPSS (V.25.0). Feature selection and ranking, model construction, evaluation and validation were developed in MATLAB V.9.2.

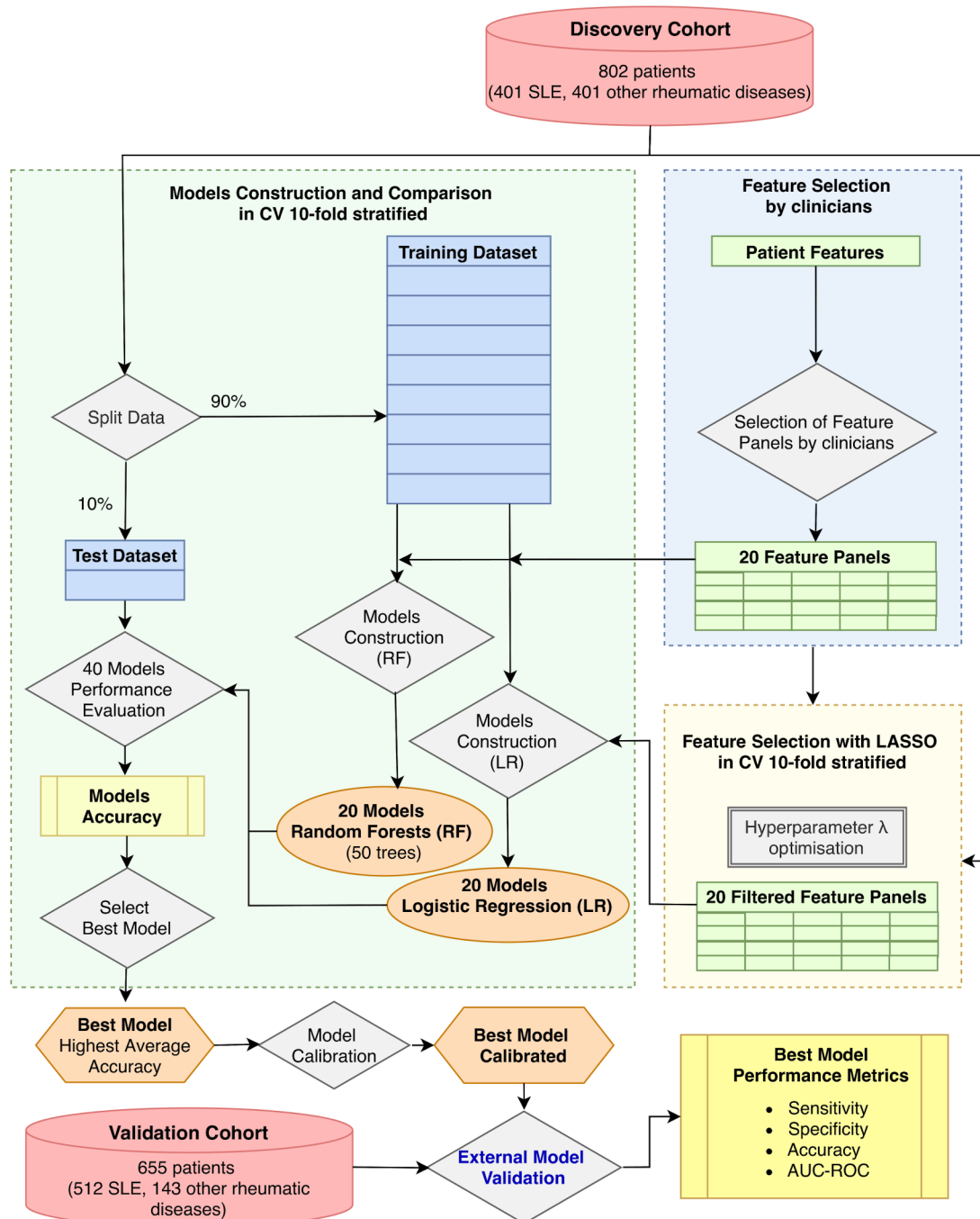


Figure 1 Schematic overview of the methodology for developing a machine learning-based diagnostic model for SLE. We used a *discovery cohort* of randomly selected 802 adults with SLE or control rheumatologic diseases (1:1 ratio) to prepare 20 clinically selected panels of classification criteria items (both in their original version and deconvoluted into subitems in the case of composite items) and non-criteria features. Two machine learning methods were applied for feature selection and model construction for each panel: (A) Random Forests (RF) and (B) Least Absolute Shrinkage and Selection Operator (LASSO) followed by logistic regression (LASSO-LR). The best model (highest accuracy the in 10-fold cross-validation process) was further tested in an independent dataset of 512 patients with systemic lupus erythematosus (SLE) and 143 disease controls (*validation cohort*). AUC, area under the curve; CV, cross-validation; ROC, receiver operating curve.

RESULTS

Combination of the classification criteria with additional features yields modest improvements in diagnostic accuracy for SLE

Classification criteria comprising different collections of clinical and immunological features classify patients with SLE in routine practice with high sensitivity and specificity.^{11 32–38} We examined whether their combination with additional, non-redundant

features can improve their performance. We used a balanced discovery cohort of 802 patients with clinically diagnosed SLE or control diseases to fit two ML algorithms, RF and LASSO-LR (figure 1). Combinatory models of the criteria with additional features showed increased accuracy for SLE (by 0.38%–3.11% in the 10-fold CV runs) over the original versions of the criteria (online supplemental table S5). The greatest improvement was observed for ACR 1997-based models where LASSO feature

selection identified alopecia, hypocomplementinemia, maculopapular rash and interstitial lung disease (ILD) as additional predictors for SLE. Modeling the EULAR/ACR 2019 classification score together with antinuclear antibodies (ANA) (treated as additional feature rather than as *entry criterion*), ILD and livedo reticularis showed enhanced diagnostic performance. These results suggest that certain modifications that could improve—albeit modestly—the accuracy of the classification criteria for SLE.

A de novo-constructed LR model has superior performance for SLE diagnosis

We next sought to develop a novel statistical algorithm by integrating individual items from the classification criteria and additional non-criteria manifestations. Feature selection was performed either embedded in RF or prior to the model construction phase, with LR based on LASSO-LR. An important difference between these two methods is that if several highly correlated variables are predictive, LASSO may select one or a few while RF may use all of them. The best model in the discovery cohort 10-fold CV runs was a LASSO-LR model of 14 clinical parameters (hereafter referred to as ‘SLERPI’: SLE Risk Probability Index) (online supplemental table S5).

The model parameters included features from all three sets of classification criteria and ILD as a single non-criteria feature. Autoimmune thrombocytopenia or haemolytic anaemia, malar or maculopapular rash, low C3 and C4, proteinuria (all defined according to the EULAR/ACR 2019 criteria), ANA and the ACR 1997 immunological disorder (modified to include anti- β 2-glycoprotein antibodies) had the strongest positive association with SLE (figure 2A, online supplemental figure S1). Using a validation cohort of 512 clinically diagnosed patients with SLE and 143 disease controls to confirm our model, we noted excellent ability to discriminate true positive (SLE) versus false positive (control) cases with an area under the ROC curve (AUC) of 0.981 (figure 2B).

The new LR model enables SLE risk stratification into distinct diagnostic certainty levels

To determine how our model could be used in clinical practice, we applied the LR equation to generate SLE risk probabilities ranging 0%–100%, depending on the combination of features/predictors. We reasoned that different ranges of probabilities correspond to varying diagnostic certainty levels alike clinical thinking. For this, we calculated the SLE risk probabilities for all patients in the discovery cohort followed by unsupervised k-means clustering to detect unbiased risk probabilities partitions. Following merging of the closely related clusters C and D (online supplemental figure S2), we obtained four groups of increasing risk probability bins (0%–14%, 15%–43%, 44%–86%, 87%–100%).

Next, we used the validation cohort to determine the proportion of actual SLE and control patients captured within each predicted SLE risk group (figure 3A). Results were averaged from randomly generated, non-overlapping patient subsets (seven subsets each containing 73 or 74 patients with SLE, two subsets containing 71 and 72 disease controls). We confirmed the high discriminating capacity of our model as the majority of control (80%) and patients with SLE (82%) were in the lowest (0%–14%) and highest (87%–100%) risk groups, respectively. Concordantly, accuracy was highest in the two extreme risk groups but dropped in the intermediate ones. Thus, about 21% and 71% of the validation cohort patients in the 15%–43% and 44%–86% risk groups, respectively, had clinical SLE (figure 3B).

Using the upper limit probabilities of the risk groups as diagnostic thresholds (>14%, >43%, >86%), the average positive likelihood ratios (LR) for SLE were 5.0, 13.8 and 58.4, respectively, corresponding to moderate, large and very large increases in the likelihood of SLE (figure 3C). The >14% threshold had a negative LR 0.017, suggesting it can be used to exclude SLE against competing diseases with relatively high certainty. Taken together, we can assign the groups ‘definitive SLE’, ‘likely SLE’, ‘possible/cannot rule out SLE’ and ‘unlikely SLE’ to our model probability bins 87%–100%, 44%–86%, 15%–43% and 0%–14%, respectively. To put these data into clinical context, figure 3D illustrates matrices of predicted SLE risk probabilities based on combinations of various features.

Next, we examined the criterion validity of our model by determining its predictive ability against disease-relevant outcomes in the validation SLE cohort. Patients’ risk probabilities correlated positively with increasing disease severity ($p < 0.0001$) and organ damage ($p = 0.0019$) (figure 3E), reflecting increased disease burden. Likewise, patients with SLE with low predicted risk probabilities (0%–14%, 15%–43%) had milder forms of the disease due to lower prevalence of British Isles Lupus Assessment Group (BILAG) A manifestations and organ damage (online supplemental figure S3A–B).

The SLERPI has high accuracy for detecting SLE including patients with early disease and severe disease requiring potent treatment

In addition to continuous risk prediction, binary outcome models (disease of interest is *present* or *absent*) are most helpful in decision-making. We used the discovery cohort for the unbiased definition of the model probability cut-off to separate SLE versus other rheumatological diseases. Based on the maximal Youden’s statistics, the 50% risk probability threshold was chosen (online supplemental figure S4A–C). At this threshold, the SLERPI demonstrated high sensitivity (95.1%), specificity (93.7%) and accuracy (94.8%, corrected to 93.9% based on an expected 3:17 ratio of SLE: controls in real-life setting) in the total validation cohort (figure 4A, online supplemental figure S5A). When tested against the control subset with undifferentiated connective tissue disease ($n = 56$), the model specificity was 91.1%. We further determined the model discriminative ability in disease subsets of clinical relevance such as early SLE, lupus nephritis, neuropsychiatric SLE (NPSLE) and severe disease necessitating potent immunosuppressive or biological treatment. The model yielded very high rates of correct predictions within the aforementioned patient groups (figure 4B, online supplemental figure S5B).

Finally, to facilitate its implementation in daily practice, we converted our model into a simple scoring system (table 1). The scoring system-generated SLE probabilities showed high correlation with the risk probabilities produced by the original LR model (r^2 0.996) in the validation cohort. When operated at a threshold of >7 (out of maximum score 30.5), the sensitivity, specificity and accuracy were estimated at 94.2%, 94.4% and 94.2%, respectively, suggesting comparable performance with the original model.

DISCUSSION

Herein, we have developed and validated a simple, clinically applicable model to assist SLE diagnosis through ML training of well-characterised data from two large discovery and validation patient cohorts. Our model comprising 14 classical, variably weighted features, enables continuous risk prediction for

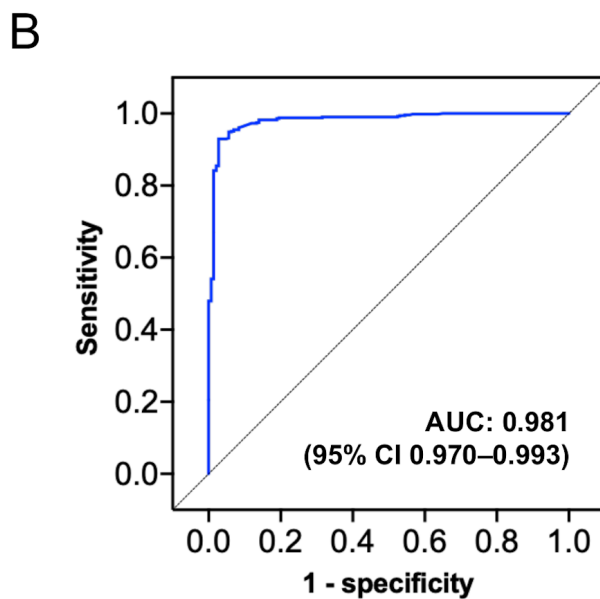
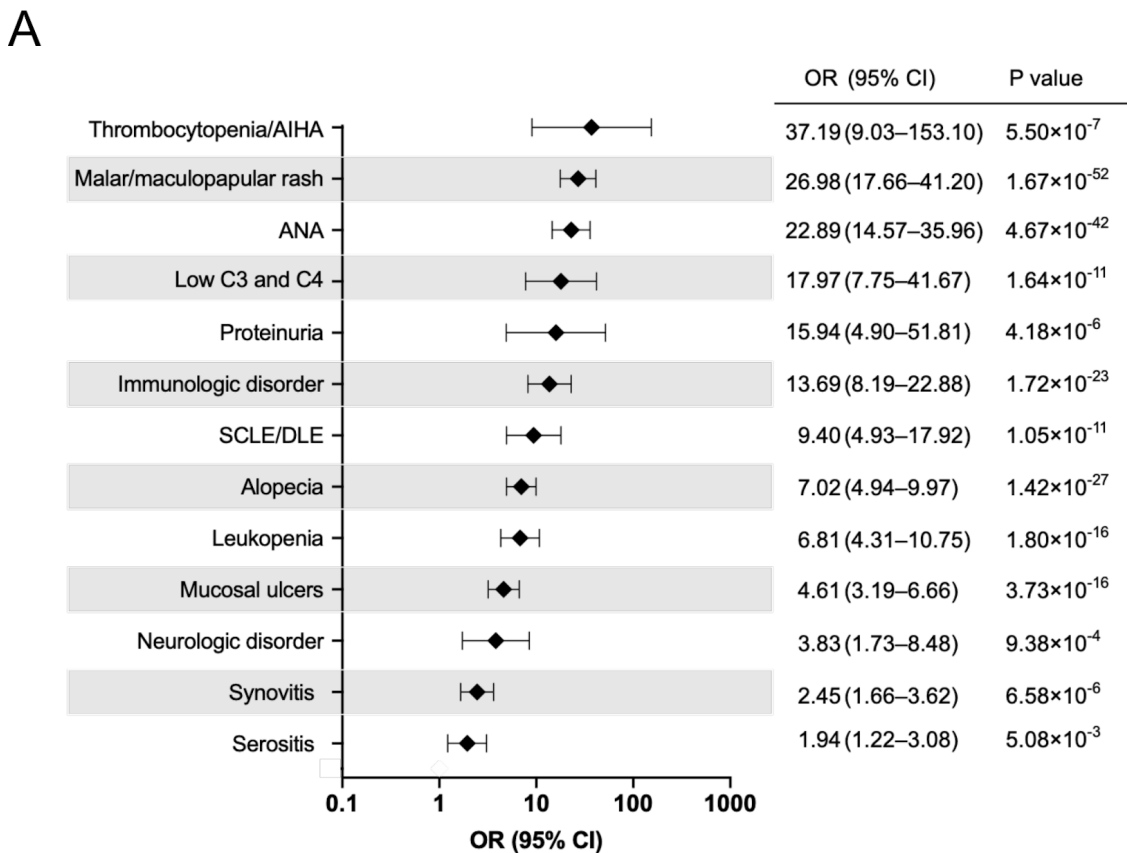


Figure 2 A Least Absolute Shrinkage and Selection Operator-logistic regression (LASSO-LR) model shows high discriminating capacity for SLE against competing rheumatological diseases. (A) A LASSO-LR model comprising of 14 clinical and serological features showed the highest accuracy for SLE in the 10-fold cross-validation runs from the *discovery cohort*. The plot illustrates the features associated with increased likelihood for SLE as compared with control rheumatological diseases along with the corresponding effect sizes (OR; 95% CI, p value). All model parameters are treated as dichotomous (ie, present=1, absent=0) in the LR equation as follows: $F(x) = \text{Intercept} + (1.80 \times \text{mucosal ulcers}^1) + (2.96 \times \text{synovitis}^1) + (1.83 \times \text{serositis}^1) + (3.66 \times \text{immunologic disorder}^2) + (4.42 \times \text{antinuclear antibodies (ANA)}^3) + (2.13 \times \text{alopecia}^4) + (2.17 \times \text{neurologic disorder}^4) + (4.25 \times \text{malar and/or maculopapular rash}^3) + (2.58 \times \text{subacute cutaneous lupus erythematosus (SCLE) and/or discoid lupus erythematosus (DLE)}^3) + (1.82 \times \text{leucopenia}^3) + (6.46 \times \text{thrombocytopenia and/or autoimmune haemolytic anaemia (AIHA)}^3) + (6.63 \times \text{low C3 and C4}^3) - (1.45 \times \text{interstitial lung disease (ILD)}^5)$; ¹defined according to the ACR 1997 classification criteria, ²defined according to the ACR 1997 criteria modified to include also positive anti-β2 glycoprotein IgG or IgM antibodies, ³defined according to the EULAR/ACR 2019 classification criteria, ⁴defined according to the SLICC 2012 classification criteria, ⁵see online supplemental table S2) (B) The LASSO-LR model presented in (A) was further evaluated in an external (validation) cohort of patients with 512 patients with SLE and 143 disease controls. The graph represents the receiver operating curve with a calculated area under the curve of 0.981 indicating an excellent capacity of the model to discriminate SLE versus disease controls.

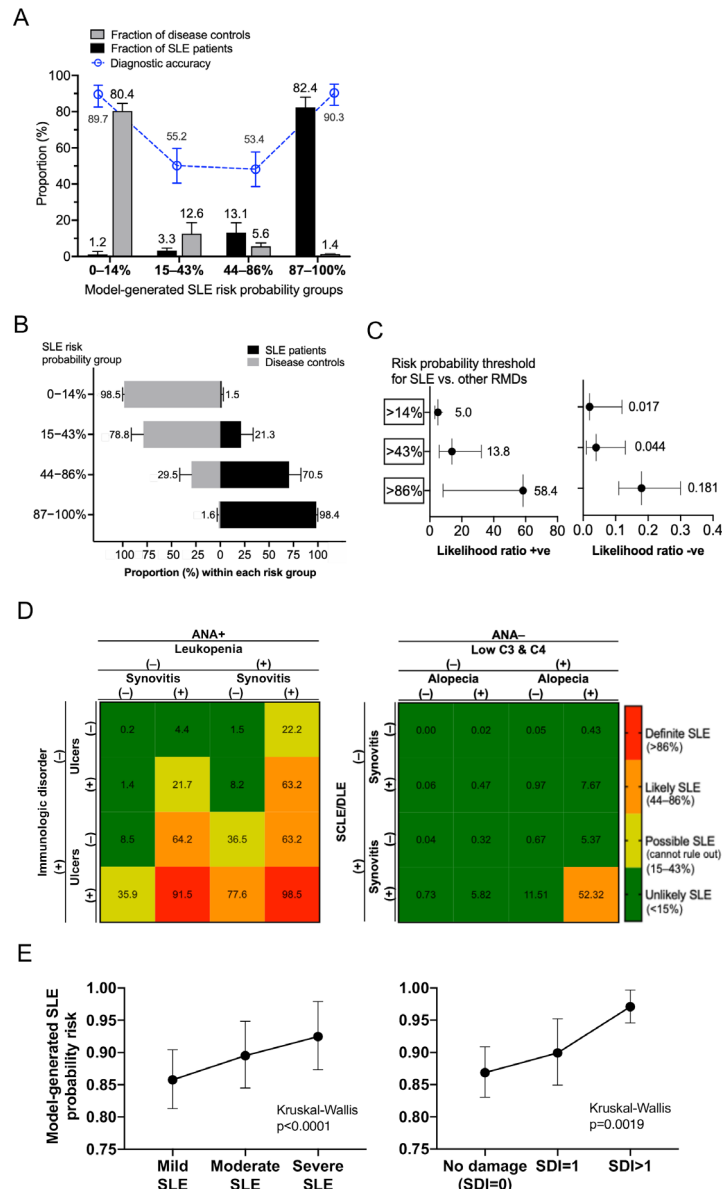


Figure 3 The Least Absolute Shrinkage and Selection Operator-logistic regression (LASSO-LR) model can generate SLE risk probabilities, which correspond to distinct diagnostic certainty levels and correlate with disease outcomes. (A) Bar plot representation of the fraction of patients with SLE patients and disease controls (*validation cohort*) according to increasing bins of predicted SLE risk probabilities (0%–14%, 15%–43%, 44%–86%, 87%–100%) calculated by the LASSO-LR model shown in figure 2. Superimposed are the diagnostic accuracies (blue-coloured) corresponding to the rates of correct classification of disease controls against patients with SLE in the lower two probability bins (0%–14%, 15%–43%), and of patients with SLE against disease controls in the higher two probability bins (44%–86%, 87%–100%). Results are averages (\pm SD for patient fractions or 95% CI for the accuracy metric) calculated from randomly generated, non-overlapping subsets of patients with SLE (seven subsets each containing 73 or 74 patients) and disease controls (two subsets containing 71 and 72 patients) from the *validation cohort*. The majority of control (average 80%) and SLE (average 82%) patients belong to the lowest (0%–14%) and the highest (87%–100%) risk probability groups, respectively. In accordance, accuracy was highest in these two extreme risk groups but dropped in the intermediate ones (15%–43%, 44%–86%). (B) Bar plot representation of the relative proportion of SLE and disease controls (*validation cohort*) within each SLE risk probability bin (0%–14%, 15%–43%, 44%–86%, 87%–100%). Calculations were made from the non-overlapping subsets of patients with SLE and disease controls as outlined in (A). (C) Positive- and negative-likelihood ratios (LRs) (mean, 95% CI) for the diagnosis of SLE against control diagnoses, according to different SLE risk probability thresholds (>14%, >43%, >86%) applied to the *discovery cohort*. Calculations were made from the non-overlapping subsets of patients with SLE and disease controls as outlined in (A). The >14% threshold had an average LR+5.0 and LR–0.017, which correspond to a moderate increase when tested positive and a large decrease when tested negative in the likelihood for SLE, respectively. (D) Matrices of SLE risk probabilities based on different combinations of features included in the LASSO-LR diagnostic model. In each scenario, the calculated probability fits to one of the four SLE risk groups corresponding to varying diagnostic certainty levels (unlikely SLE: 0%–14%, possible/cannot rule out SLE: 15%–43%, likely SLE: 44%–86%, definite SLE: 87%–100%). (E) Dot plot analysis of the model-generated SLE risk probabilities according to the severity of disease manifestations (defined based on the BILAG system) and organ damage (SLICC/ACR Damage Index (SDI)). Data were generated from the *validation cohort* patients with SLE (n=512) and are presented as mean (95% CI). The Kruskal-Wallis (non-parametric) analysis of variance test was performed and two-tailed p values are shown. ANA, antinuclear antibodies; RMDs, rheumatic diseases; SCL/LE, subacute cutaneous lupus erythematosus; SDI, SLICC/ACR damage index; SLE, systemic lupus erythematosus.

A

		Actual cases		Metric	Value (95% CI)
		SLE	Control diseases		
Predicted cases	SLE	487	9	Sensitivity	0.951 (0.928-0.968)
	Control diseases	25	134	Specificity	0.937 (0.880-0.969)
				Accuracy	0.948 (0.928-0.964)
				Likelihood ratio +ve	15.11 (8.03-28.45)
				Likelihood ratio -ve	0.052 (0.036-0.076)

B

Disease subgroups	Sensitivity (95% CI)
Early SLE (n=276)	0.938 (0.903-0.964)
Lupus nephritis (n=48)	0.979 (0.891-0.996)
Neuropsychiatric lupus (n=61)	0.918 (0.822-0.965)
Hematological lupus (n=74)	0.986 (0.927-0.998)
Severe SLE (n=110)	0.964 (0.910-0.986)

Figure 4 The new diagnostic model has high accuracy for systemic lupus erythematosus (SLE) including early and severe disease requiring immunosuppressive or biologic treatment. (A) Confusion matrix of the actual versus predicted cases of patients with SLE (n=512) and disease controls (n=143) in the validation cohort. The LASSO-LR diagnostic model was operated as binary (SLE or not-SLE) by setting the SLE risk probability threshold at $\geq 50\%$. Based on the number of true-positive, true-negative, false-positive and false-negative cases, sensitivity, specificity, accuracy, positive- and negative-likelihood ratios are estimated as metrics of the model diagnostic performance. (B) Sensitivity of the LASSO-LR model (operated as binary) for the detection of clinically relevant subsets of SLE including early disease, lupus nephritis, neuropsychiatric lupus, haematological lupus and severe lupus requiring potent immunosuppressive and/or biologic treatment.

clinical SLE, thus resembling clinical reasoning, while attaining a combination of high sensitivity and specificity against alternative rheumatologic diseases. When used as a dichotomous algorithm (SLE-or-not), the SLERPI exhibits high accuracy for SLE, including early and severe/organ-threatening disease forms.

In clinical practice, physicians can elicit the diagnosis of SLE even in the presence of a few high-yield manifestations such as typical malar rash in an individual with anti-DNA autoantibodies.^{1 39} Such decisions reflect a form of human intelligence that develops through clinical experience even with a limited number of patients. Conversely, computational intelligence tools require training on large comprehensive data sets to produce valid results.¹⁴ We used a discovery sample of well-characterised SLE and control patients for unbiased selection of features that contribute most to clinical SLE diagnosis. Patients with SLE with relatively early disease (median duration 4.2 years) and irrespective of the severity of manifestations were included, as compared with developing classification criteria, which typically rely on cases with long-standing disease.

Thrombocytopenia/autoimmune haemolytic anaemia (AIHA), malar rash, proteinuria, ANA, immunological disorder (anti-DNA, anti-Sm, anti-phospholipid antibodies) and combined C3 and C4 hypocomplementemia were the strongest predictors against competing rheumatological diseases. These results are in line with the variably weighted items introduced in the EULAR/ACR 2019 classification criteria, where, for example, thrombocytopenia/AIHA is scored higher than leucopenia and malar rash higher than other rashes.^{9 10 40}

SLE displays marked phenotypic heterogeneity ranging from systemic to organ-limited/dominant forms. Clinical and

immunological features may accrue sequentially in time, thus reflecting an evolving process.^{41 42} Indeed, various terms have been used to describe different patient profiles such as 'definitive SLE', 'probable SLE', 'possible SLE', 'lupus-like' or 'incomplete lupus'. Our model calculates risk probabilities, which correlate with certainty levels for the presence of SLE versus competing rheumatological diseases. Based on unsupervised clustering, we hereby propose a risk probability-based stratification of patients with suspected SLE into 'unlikely', 'possible' (cannot rule out), 'likely' and 'definitive' SLE, depending on the type and number of features. This approach resembles diagnostic reasoning especially when encountering a patient for the first time.^{43 44} Our model can be used not only to exclude (when risk probability is $< 14\%$) or confirm (when risk probability exceeds 86%) SLE but also to alert physicians to identify and monitor patients with intermediate probabilities. Similar approaches have been used in other complex diseases.⁴⁵

By operating our model as binary, we achieved very high rates of sensitivity, specificity and accuracy assessed in a validation cohort. Our model can identify SLE under different clinical scenarios such as: (a) lupus autoantibodies concurring with a single clinical feature from a major organ (eg, thrombocytopenia/AIHA), (b) multiple clinical but no immunological features, (c) limited or non-specific serological features (eg, ANA) concurring with high-yield clinical manifestations (eg, malar rash). We noted excellent performance within patient subgroups with early disease, biopsy-proven lupus nephritis, neuropsychiatric disease and severe disease necessitating potent immunosuppressive or biologic therapies.

Table 1 A simple scoring system version of the SLE Risk Probability Index*

Feature	Score
Malar rash or maculopapular rash†	3
Subacute cutaneous lupus erythematosus or discoid lupus erythematosus†	2
Alopecia‡	1.5
Mucosal ulcers§	1
Arthritis§	2
Serositis§	1.5
Leucopenia<4000/µL (at least once)†	1.5
Thrombocytopenia or autoimmune haemolytic anaemia†	4.5
Neurological disorder‡	1.5
Proteinuria>500 mg/24 hours†	4.5
ANA†	3
Low C3 and C4†	2
Immunological disorder (any of: anti-DNA, anti-Sm, anti-phospholipid antibodies)¶	2.5
Interstitial lung disease**	-1
SLE if total score >7††	

*Apply the model in individuals with clinical suspicion for SLE. Each feature is counted if present (ever) and if not explained by other cause (eg, drug effects, infections, malignant disorders, alternative more likely disease).

†Defined as in Aringer *et al.*^{9,10}

‡Defined as in Petri *et al.*⁸

§Defined as in Hochberg.²⁷

¶Defined as in Hochberg²⁷ modified to include also positive anti-β₂ glycoprotein IgG or IgM or IgA antibodies.

**Radiologic features of lung disease suggesting inflammation and fibrosis of the alveoli, distal airways and septal interstitium of the lung, as observed with a high-resolution CT scan of the chest.

††When operated at a threshold (sum of individual scores) of >7 (out of a maximum value 30.5), the sensitivity, specificity and accuracy rates are 94.2%, 94.4% and 94.2%, respectively.

ANA, antinuclear antibodies; SLE, systemic lupus erythematosus.

ML-based tools are increasingly used to simulate human 'medical reasoning' and effectively handle complex tasks. Such models can be trained from many different kinds of medical or biological data. Our data sets included well-defined features derived from the three classification criteria, and also non-criteria features often considered by physicians in cases of suspected SLE. ILD was a feature alienating the probability of SLE while favouring alternative rheumatological disease. Integration of additional clinical, laboratory or biological (eg, transcriptome) variables could lead to the development of even more robust models.^{46,47} The fact that our model comprises 14 classical, easily retrieved clinical variables facilitates its clinical implementation.

Additional studies should prospectively evaluate and independently validate the proposed model to establish its clinical utility and effect on a variety of patient and healthcare outcomes. Notwithstanding, our analysis might provide useful insights towards the possible future development of formal SLE diagnostic criteria, a currently unmet need.³⁹ To this end, establishing a firm diagnosis and treatment plan still remains at the judgement of experienced physicians.

Our study is limited by its retrospective design and data extraction from medical records; accordingly, some clinical information may have been missed or underestimated. Nonetheless, both centres maintain detailed patient registries and use structured forms for collecting clinical data, which helps to reduce possible information/data completeness bias. Developing a model for early diagnosis should ideally be based on

cohorts with very early disease and before the appearance of adverse outcomes, however, it can be challenging to recruit large numbers of such cases.^{3,48} Although we used two state-of-the-art ML approaches, a number of other sophisticated algorithms of higher complexity exist (eg, deep neural networks⁴⁹). Our model also requires validation in additional cohorts of diverse population characteristics (eg, non-Caucasians), including infectious disease controls.

Conclusively, we have developed and evaluated a new, simple and interpretable model for the detection of SLE based on common clinical and serological features. Our model provides risk predictions that correlate with clinical endpoints and support patient probabilistic disease classification of potential clinical relevance. Pending further confirmation of its performance, the SLERPI could assist the early diagnosis and treatment of SLE, including early and severe forms, to improve patient outcomes.

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Contributors CA, DN and MN collected data from patient medical charts and also performed data entry. IG designed and implemented the machine learning (ML) methodology, constructed and evaluated the ML models and drafted the relevant methodology sections on feature selection, model construction, evaluation and statistical analysis. AB organised the RedCap database. AR and AF assessed patients enrolled in the study and collected data from patient medical charts. PS and DTB assisted in patient recruitment and critically reviewed the manuscript. GKB conceived and supervised the study, performed statistical analyses and drafted the manuscript.

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REFERENCES

- Doria A, Zen M, Canova M, et al. SLE diagnosis and treatment: when early is early. *Autoimmun Rev* 2010;10:55–60.
- Feng X, Zou Y, Pan W, et al. Associations of clinical features and prognosis with age at disease onset in patients with systemic lupus erythematosus. *Lupus* 2014;23:327–34.
- Morgan C, Bland AR, Maker C, et al. Individuals living with lupus: findings from the lupus UK members survey 2014. *Lupus* 2018;27:681–7.
- Oglesby A, Korves C, Laliberté F, et al. Impact of early versus late systemic lupus erythematosus diagnosis on clinical and economic outcomes. *Appl Health Econ Health Policy* 2014;12:179–90.
- Faurschou M, Dreyer L, Kamper A-L, et al. Long-Term mortality and renal outcome in a cohort of 100 patients with lupus nephritis. *Arthritis Care Res* 2010;62:873–80.
- Gergianaki I, Bertias G. Systemic lupus erythematosus in primary care: an update and practical messages for the general practitioner. *Front Med* 2018;5:161.
- Aggarwal R, Ringold S, Khanna D, et al. Distinctions between diagnostic and classification criteria? *Arthritis Care Res* 2015;67:891–7.
- Petri M, Orbai A-M, Alarcón GS, et al. Derivation and validation of the systemic lupus international collaborating clinics classification criteria for systemic lupus erythematosus. *Arthritis Rheum* 2012;64:2677–86.
- Aringer M, Costenbader K, Daikh D, et al. European League against Rheumatism/ American College of rheumatology classification criteria for systemic lupus erythematosus. *Arthritis Rheumatol* 2019;2019:1400–12.
- Aringer M, Costenbader K, Daikh D, et al. European League against Rheumatism/ American College of rheumatology classification criteria for systemic lupus erythematosus. *Ann Rheum Dis* 2019;2019:1151–9.
- Adamichou C, Nikolopoulos D, Genitsaridi I, et al. In an early SLE cohort the ACR-1997, SLICC-2012 and EULAR/ACR-2019 criteria classify non-overlapping groups of patients: use of all three criteria ensures optimal capture for clinical studies while their modification earlier classification and treatment. *Ann Rheum Dis* 2020;79:232–41.
- Pons-Estel GJ, Ugarte-Gil MF, Harvey GB, et al. Applying the 2019 EULAR/ACR lupus criteria to patients from an established cohort: a Latin American perspective. *RMD Open* 2020;6:e001097.
- Pelaccia T, Forestier G, Wemmer C. Deconstructing the diagnostic reasoning of human versus artificial intelligence. *CMAJ* 2019;191:E1332–5.
- Rajkomar A, Dean J, Kohane I. Machine learning in medicine. *N Engl J Med* 2019;380:1347–58.
- Pinal-Fernandez I, Casal-Dominguez M, Derfoul A, et al. Machine learning algorithms reveal unique gene expression profiles in muscle biopsies from patients with different types of myositis. *Ann Rheum Dis* 2020;79:1234–42.
- Orange DE, Agius P, DiCarlo EF, et al. Identification of three rheumatoid arthritis disease subtypes by machine learning integration of synovial histologic features and RNA sequencing data. *Arthritis Rheumatol* 2018;70:690–701.
- Lezcano-Valverde JM, Salazar F, León L, et al. Development and validation of a multivariate predictive model for rheumatoid arthritis mortality using a machine learning approach. *Sci Rep* 2017;7:10189.
- Guan Y, Zhang H, Quang D, et al. Machine learning to predict anti-tumor necrosis factor drug responses of rheumatoid arthritis patients by integrating clinical and genetic markers. *Arthritis Rheumatol* 2019;71:1987–96.
- Kegerreis B, Catalina MD, Bachali P, et al. Machine learning approaches to predict lupus disease activity from gene expression data. *Sci Rep* 2019;9:9617.
- Huang Z, Shi Y, Cai B, et al. Maldi-Tof MS combined with magnetic beads for detecting serum protein biomarkers and establishment of boosting decision tree model for diagnosis of systemic lupus erythematosus. *Rheumatology* 2009;48:626–31.
- Walsh JA, Rozycki M, Yi E, et al. Application of machine learning in the diagnosis of axial spondyloarthritis. *Curr Opin Rheumatol* 2019;31:362–7.
- Watson DS, Krutznina J, Bruce IN, et al. Clinical applications of machine learning algorithms: beyond the black box. *BMJ* 2019;364:l886.
- Gao C, Sun H, Wang T, et al. Model-Based and model-free machine learning techniques for diagnostic prediction and classification of clinical outcomes in Parkinson's disease. *Sci Rep* 2018;8:7129.
- Gergianaki I, Fanouriakis A, Repa A, et al. Epidemiology and burden of systemic lupus erythematosus in a southern European population: data from the community-based lupus Registry of Crete, Greece. *Ann Rheum Dis* 2017;76:1992–2000.
- Nikolopoulos D, Kostopoulou M, Pieta A, et al. Evolving phenotype of systemic lupus erythematosus in Caucasians: low incidence of lupus nephritis, high burden of neuropsychiatric disease and increased rates of late-onset lupus in the 'Attikon' cohort. *Lupus* 2020;29:514–22.
- Nikolopoulos DS, Kostopoulou M, Pieta A, et al. Transition to severe phenotype in systemic lupus erythematosus initially presenting with non-severe disease: implications for the management of early disease. *Lupus Sci Med* 2020;7:e000394.
- Hochberg MC. Updating the American College of rheumatology revised criteria for the classification of systemic lupus erythematosus. *Arthritis Rheum* 1997;40:40.
- Papadaki E, Fanouriakis A, Kavroulakis E, et al. Neuropsychiatric lupus or not? cerebral hypoperfusion by perfusion-weighted MRI in normal-appearing white matter in primary neuropsychiatric lupus erythematosus. *Ann Rheum Dis* 2018;77:441–8.
- Bortoluzzi A, Scirè CA, Bombardieri S, et al. Development and validation of a new algorithm for Attribution of neuropsychiatric events in systemic lupus erythematosus. *Rheumatology* 2015;54:891–8.
- Isenberg DA, Rahman A, Allen E, et al. BILAG 2004. development and initial validation of an updated version of the British Isles lupus assessment group's disease activity index for patients with systemic lupus erythematosus. *Rheumatology* 2005;44:902–6.
- Gladman D, Ginzler E, Goldsmith C, et al. The development and initial validation of the systemic lupus international collaborating Clinics/American College of rheumatology damage index for systemic lupus erythematosus. *Arthritis Rheum* 1996;39:363–9.
- Aberle T, Bourn RL, Chen H, et al. Use of SLICC criteria in a large, diverse lupus registry enables SLE classification of a subset of ACR-designated subjects with incomplete lupus. *Lupus Sci Med* 2017;4:e000176.
- Amezcu-Guerra LM, Higuera-Ortiz V, Artega-García U, et al. Performance of the 2012 systemic lupus international collaborating clinics and the 1997 American College of rheumatology classification criteria for systemic lupus erythematosus in a real-life scenario. *Arthritis Care Res* 2015;67:437–41.
- Hartman EAR, van Royen-Kerkhof A, Jacobs JW, et al. Performance of the 2012 systemic lupus international collaborating clinics classification criteria versus the 1997 American College of rheumatology classification criteria in adult and juvenile systemic lupus erythematosus. A systematic review and meta-analysis. *Autoimmun Rev* 2018;17:316–22.
- Ighe A, Dahlström Örn, Skogh T, et al. Application of the 2012 systemic lupus international collaborating clinics classification criteria to patients in a regional Swedish systemic lupus erythematosus register. *Arthritis Res Ther* 2015;17:3.
- Inês L, Silva C, Galindo M, et al. Classification of systemic lupus erythematosus: systemic lupus international collaborating clinics versus American College of rheumatology criteria. A comparative study of 2,055 patients from a real-life, International systemic lupus erythematosus cohort. *Arthritis Care Res* 2015;67:1180–5.
- Pons-Estel GJ, Wojdyla D, McGwin G, et al. The American College of rheumatology and the systemic lupus international collaborating clinics classification criteria for systemic lupus erythematosus in two multiethnic cohorts: a commentary. *Lupus* 2014;23:3–9.
- Sacre K, Delaval L, Dossier A, et al. New 2019 SLE EULAR/ACR classification criteria are valid for identifying patients with SLE among patients admitted for pericardial effusion. *Ann Rheum Dis* 2019. doi:10.1136/annrheumdis-2019-216712. [Epub ahead of print: 06 Dec 2019].
- Bertias GK, Pamfil C, Fanouriakis A, et al. Diagnostic criteria for systemic lupus erythematosus: has the time come? *Nat Rev Rheumatol* 2013;9:687–94.
- Tedeschi SK, Johnson SR, Boumpas DT, et al. Multicriteria decision analysis process to develop new classification criteria for systemic lupus erythematosus. *Ann Rheum Dis* 2019;78:634–40.
- Lambers WM, Westra J, Jonkman MF, et al. Incomplete systemic lupus erythematosus: what remains after application of American College of rheumatology and systemic lupus international collaborating clinics criteria? *Arthritis Care Res* 2020;72:607–14.
- Mosca M, Tani C, Carli L, et al. Undifferentiated CTD: a wide spectrum of autoimmune diseases. *Best Pract Res Clin Rheumatol* 2012;26:73–7.
- Donner-Banzhoff N. Solving the diagnostic challenge: a patient-centered approach. *Ann Fam Med* 2018;16:353–8.
- Soltani A, Moayeri A. Deterministic versus evidence-based attitude towards clinical diagnosis. *J Eval Clin Pract* 2007;13:533–7.
- Ntranos A, Lublin F, Criteria D. Diagnostic criteria, classification and treatment goals in multiple sclerosis: the Chronicles of time and space. *Curr Neurol Neurosci Rep* 2016;16:90.
- Alarcón-Riquelme ME. New attempts to define and clarify lupus. *Curr Rheumatol Rep* 2019;21:11.
- Panousis NI, Bertias GK, Ongen H, et al. Combined genetic and transcriptome analysis of patients with SLE: distinct, targetable signatures for susceptibility and severity. *Ann Rheum Dis* 2019;78:1079–89.
- Piga M, Floris A, Sebastiani GD, et al. Risk factors of damage in early diagnosed systemic lupus erythematosus: results of the Italian multicentre early lupus project inception cohort. *Rheumatology* 2020;59:2272–81.
- Tomašev N, Glorot X, Rae JW, et al. A clinically applicable approach to continuous prediction of future acute kidney injury. *Nature* 2019;572:116–9.

Supplementary Methods

Clinical setting, discovery and validation cohorts

This is a retrospective observational study exploiting data from the Department of Rheumatology, University Hospital of Heraklion (community-based centre at Heraklion, Crete) and the Rheumatology Clinic, “Attikon” University Hospital (tertiary centre in Athens, Attica) in Greece. Both centres have established SLE registries and use homogenized, structured forms for collecting demographics, clinical characteristics (including classification criteria), use of treatments and disease outcomes.[1-4] We included consecutively registered cases diagnosed during the period 01/2005-06/2019 with SLE or other diseases by consultant rheumatologists with at least 5 years clinical practice. The aforementioned time interval was selected to ensure data completeness and reduce possible information/classification bias. Additional inclusion criteria were: sufficient patient identification and clinical data, age of diagnosis ≥ 16 years, known status of ANA and serum complements C3/C4, and follow-up at least 6 months to confirm the diagnosis (SLE or other). Disease controls were selected from the electronic patient databases of the two participating centres, and included miscellaneous lupus-mimicking rheumatologic diseases (**Supplementary Table S1**).

We used a randomly-selected sample of 401 SLE patients and 401 disease controls (*discovery cohort*) to construct, train and compare the ML models. Part of this dataset has been used in previous work to evaluate the SLE classification criteria.[1] The balanced (1:1) ratio of SLE cases and controls was chosen in order to minimise any predictive modelling biases. An independent sample of 512 SLE patients and 143 disease controls (*validation cohort*) was used to provide an unbiased estimate of the diagnostic accuracy of the best model selected from the discovery cohort. The study was approved by the local Ethics Committees.

Clinical variables and dataset preparation

For each patient, demographics, rheumatological disease and date of diagnosis, presence and date of earliest reported occurrence of each of the items from all three classification criteria sets (ACR 1997,[5] SLICC 2012,[6] EULAR/ACR 2019[7, 8]) and date of last follow-up visit/assessment were

extracted from medical charts. Attribution of the criteria items to SLE or not was arbitrated by rheumatologists (DB, GB, AF) with special interest and experience in the disease, and we followed the EULAR/ACR attribution process[7, 8] We used both criteria items in their original version and after deconvolution into sub-items (e.g. “*maculopapular lupus rash*” sub-item from the EULAR/ACR 2019 “*acute cutaneous lupus*” criterion). In addition, we monitored for the presence of a predefined list of clinical and serological features not included in the criteria (e.g. Raynaud’s phenomenon, anti-RNP antibodies) (**Supplementary Table S2**). Missing data were eliminated through vigorous charts review and quality control, and a few patients with no documentation of immunological tests were considered negative for these items.

Computational methods for feature selection, model construction and evaluation

We followed two approaches for developing a predictive model for SLE using the discovery cohort.

First, we combined each one of the three classification criteria (ACR 1997, SLICC 2012, EULAR/ACR 2019) with additional, non-redundant features from the other two criteria sets and with non-criteria features. Classification criteria were treated both as binary variable (classified/not-classified) and as a continuous score (e.g., sum of ACR-1997 features). *Second*, we developed a *de novo* model based on clinical variables selected from the three classification criteria (in their original form or deconvoluted into sub-items) and non-criteria features.

Univariable LR (**Supplementary Table S3**) was carried out in the discovery cohort to determine the individual association of each feature with SLE diagnosis. Correlation analysis (**Supplementary Table S4**) was performed to identify collinearity between features/predictors. Both analyses were not used to filter the variables, rather for completeness purposes and to assist clinicians in the construction of feature panels. Clinicians (GB, CA) created 20 different panels of features with the aim to introduce alternative feature versions in different panels (based on criteria deconvolution into sub-items). These 20 panels were submitted into two ML algorithms for feature selection, thus yielding a total 40 multivariable models (**Figure 1**). The first algorithm, *Random Forests* (RF), is a complex, model-free learning method with fewer assumptions and an embedded feature selection process to

further address redundant information, capable of generating highly accurate – yet less explainable due to its non-linear nature – predictions. The second, *Logistic Regression* (LR), is a standard, less complex method of analysing biomedical datasets with high interpretability, which however, lacks a feature selection process. Therefore, for each panel, a separate feature selection process was carried out prior to LR model construction, using *Least Absolute Shrinkage and Selection Operator* (LASSO) Logistic Regression method. A notable difference between these two methods is that if several highly correlated variables are predictive, LASSO may select one or a few while RF may use all of them (selected in different trees as part of the ensemble algorithm's majority voting process).

LASSO hyper-parameter λ (*lambda*) was optimized in the discovery cohort (from 100 sequential parameter values of equal intervals ranging from $\lambda=0$, which includes all features, to the lowest λ value that excludes all features from the model). As optimal λ was selected the value that yielded the minimum deviance plus one standard deviation in a 10-fold CV process and was also higher to the λ value of minimum deviance (this is a slightly stricter feature selection approach than the standard approach of selecting the λ of minimum deviance since it includes higher λ penalty and thus lower number of selected features). Features with non-zero beta coefficients in the LASSO logistic regression of the optimal λ value were subsequently included in a LR model. RF algorithm was implemented with hyper-parameter number of trees value=50. For other parameters of the algorithms, the default values or settings were used.

We performed a 10-fold stratified cross-validation (CV 10-fold) process (division of the dataset into 10 folds of near-equal size without re-substitution) to construct and compare the 40 multivariable models (20 RF, 20 LR) in terms of their predictive capability. Each fold (10%) was used as a *test dataset* to determine the model performance, while the remaining nine folds (90%) were used as the *training dataset* for the model construction. In the test dataset, we evaluated the following diagnostic metrics: sensitivity, specificity, accuracy and Area Under the Receiver-Operating-Characteristic Curve (AUC). These metrics were averaged from the 10 CV test datasets for each model. The model with the highest accuracy was selected as the best model. The best model was further evaluated in an independent *validation cohort* of 512 SLE patients and 143 disease controls by calculating the AUC,

sensitivity, specificity, accuracy, positive and negative likelihood ratios, thus obtaining an unbiased estimate of its diagnostic performance.

Feature ranking

The drop-column methodology was used (10-fold CV process in the discovery cohort) to evaluate the importance of each feature in the model predictive functionality, by excluding it from the construction process and estimating the change in the model accuracy.

Statistical analysis

The model accuracy derived from the validation cohort was corrected based on an expected ratio 3:17 of SLE patients:controls (mimicking rheumatological diseases) receiving diagnosis at a general rheumatology outpatient clinic according to the following formula:

$$\frac{(\text{sensitivity} \times \text{SLE count}) + (\text{specificity} \times \text{controls count})}{\text{total count}}$$

References

1. Adamichou C, Nikolopoulos D, Genitsaridi I, *et al.* In an early SLE cohort the ACR-1997, SLICC-2012 and EULAR/ACR-2019 criteria classify non-overlapping groups of patients: use of all three criteria ensures optimal capture for clinical studies while their modification earlier classification and treatment. *Ann Rheum Dis* 2020;79:232-41.
2. Gergianaki I, Fanouriakis A, Repa A, *et al.* Epidemiology and burden of systemic lupus erythematosus in a Southern European population: data from the community-based lupus registry of Crete, Greece. *Ann Rheum Dis* 2017;76:1992-2000.
3. Nikolopoulos D, Kostopoulou M, Pieta A, *et al.* Evolving phenotype of systemic lupus erythematosus in Caucasians: low incidence of lupus nephritis, high burden of neuropsychiatric disease and increased rates of late-onset lupus in the 'Attikon' cohort. *Lupus* 2020;29:514-22.

4. Nikolopoulos DS, Kostopoulou M, Pieta A, *et al.* Transition to severe phenotype in systemic lupus erythematosus initially presenting with non-severe disease: implications for the management of early disease. *Lupus Sci Med* 2020;7.
5. Hochberg MC. Updating the American College of Rheumatology revised criteria for the classification of systemic lupus erythematosus. *Arthritis Rheum* 1997;40:1725.
6. Petri M, Orbai AM, Alarcon GS, *et al.* Derivation and validation of the Systemic Lupus International Collaborating Clinics classification criteria for systemic lupus erythematosus. *Arthritis Rheum* 2012;64:2677-86.
7. Aringer M, Costenbader K, Daikh D, *et al.* 2019 European League Against Rheumatism/American College of Rheumatology Classification Criteria for Systemic Lupus Erythematosus. *Arthritis Rheumatol* 2019;71:1400-12.
8. Aringer M, Costenbader K, Daikh D, *et al.* 2019 European League Against Rheumatism/American College of Rheumatology classification criteria for systemic lupus erythematosus. *Ann Rheum Dis* 2019;78:1151-9.

Supplementary Table S1. Characteristics of the discovery and validation patient cohorts

	<i>Discovery cohort</i>		<i>Validation cohort</i>	
	SLE patients	Disease controls	SLE patients	Disease controls
No. patients	401	401	513	143
Ethnicity (Caucasian, %)	99.3	99.0	98.6	100.0
Gender (Female, %)	91.8	78.6	91.0	88.8
Age at diagnosis (years) ¹	43.0 (21.0)	50.0 (22.0)	42.0 (22.0)	43.0 (17.0)
Disease duration (months)	50.5 (64.9)	46.9 (85.1)	21.5 (44.5)	20.8 (34.4)
Diagnosis				
Rheumatoid arthritis		126 (31%)		28 (20%)
Undifferentiated connective tissue disease		57 (14%)		56 (39%)
Sjogren's syndrome		43 (11%)		11 (8%)
Scleroderma		42 (10%)		11 (8%)
Psoriatic arthritis		25 (6%)		7 (6%)
Vasculitis		22 (5%)		2 (1%)
Behcet's disease		17 (4%)		2 (1%)
Myositis		19 (5%)		9 (6%)
Familial Mediterranean Fever		18 (4%)		3 (2%)
Adult-onset still's disease		14 (3%)		5 (3%)
Fibromyalgia		3 (1%)		2 (1%)
Primary antiphospholipid syndrome		9 (2%)		1 (1%)
Chronic cutaneous lupus erythematosus		6 (1%)		4 (3%)
Sarcoidosis		0 (0%)		2 (1%)

¹ Median (interquartile range)

Supplementary Table S2. Definitions of the non-criteria features monitored in SLE cases and disease controls (discovery and validation cohorts)

Feature	Definition
Fatigue	Patient-reported extreme tiredness, not caused by ongoing exertion or insomnia, which is not relieved by rest.
Lymphadenopathy	Abnormally enlarged (>1cm) lymph nodes, noted either by physician examination or US/CT/MRI scans, after appropriately excluding infection and lymphoma.
Sicca	Persistent (more than 3 months) dry eyes and/or dry mouth, reported by patient.
Dermographism	An exaggerated reaction of the skin to minor scratches with the appearance of red wheals, observed by a physician.
Skin vasculitis	Presence of purpura with or without skin biopsy suggesting of leukocytoclastic vasculitis or necrotizing skin lesions resulting in gangrene, skin ulceration or skin infarction.
Livedo reticularis	A lace-like purplish discoloration of the skin with a mottled reticulated pattern, observed by a physician.
Urticaria/Angioedema	Urticaria: recurrent development of intensely pruritic, erythematous plaques, which usually appear over the course of minutes, enlarge and coalesce with other lesions, and then disappear within a few hours. Angioedema: self-limited, localized subcutaneous (or submucosal) swelling, which results from extravasation of fluid into interstitial tissues, with or without concurrent urticaria. Both conditions should be either observed by a physician or demonstrated by the patient with a photograph.
Ascites	Abnormal accumulation of fluid in the peritoneal cavity, observed by physical examination or on ultrasound, CT or MRI scan of the abdomen.
Hepatitis	Persistent transaminasemia and absence of autoantibodies specific to autoimmune hepatitis [antibodies to smooth muscle (ASMA) or liver/kidney microsomes (ALKM-1)] and/or histologic findings suggesting chronic active hepatitis, after exclusion of other forms of chronic liver disease (viral, alcoholic, NAFLD)
Mesenteric vasculitis	Angiographic findings suggesting inflammation of mesenteric vessels.
Enteropathy	1. Lupus enteritis or colitis: Vasculitis or inflammation of small or

	<p>large bowel with supporting imaging and/or biopsy findings.</p> <p>2. Protein-losing enteropathy: diarrhea with hypoalbuminemia after exclusion of gut vasculitis or malabsorption</p>
Pneumonitis	Radiologic features of alveolar infiltration not due to infection or haemorrhage.
Interstitial lung involvement	Radiologic features of lung disease suggesting inflammation and fibrosis of the alveoli, distal airways, and septal interstitium of the lung, as observed with a high-resolution CT scan of the chest.
Alveolar hemorrhage	Bleeding into the alveolar spaces of the lungs, confirmed by bronchoscopy with bronchoalveolar lavage.
TTP / TTP-like	Clinical syndrome of micro-angiopathic haemolytic anaemia and thrombocytopenia, with or without fever, neurological and/or renal impairment, usually without severe deficiency of von Willebrand Factor (VWF) cleaving metalloproteinase (ADAMTS-13).
Splenomegaly	Enlargement of the spleen, observed on ultrasound, CT or MRI scan of the abdomen, with appropriate exclusion of infection, cancer, etc.
Scleritis/episcleritis	Inflammation of the sclera/episclera, diagnosed by an ophthalmologist.
Uveitis	inflammation of the uveal tract (i.e., iris, ciliary body, choroid), diagnosed by an ophthalmologist.
Myocarditis	Inflammation of the myocardium presenting with elevation of cardiac enzymes and/or ECG changes with or without signs and symptoms of acute decompensation of heart failure. Appropriate exclusion of other causes of heart dysfunction (e.g., coronary ischemia, amyloidosis, valvular dysfunction, congenital causes) should precede.
Anti-RNP	Presence of autoantibodies against ribonucleoproteins, detected by ELISA at least once.
Anti-Ro/SSA	Presence of autoantibodies against extractable nuclear Ro proteins, detected by ELISA, at least once.
Anti-La/SSB	Presence of autoantibodies against extractable nuclear La proteins, detected by ELISA, at least once.
Raynaud's	Episodes of spasms of blood vessels of the fingers and less frequently ears, toes, nipples, knees, or nose, triggered by cold or emotional stress, resulting in the affected part turning white, then blue and, after restoration of blood flow, the area turns red and burns. Diagnosis is made either by the description of an episode by the patient or by

	physician observation.
Myositis	Inflammation of the muscles resulting in prolonged elevation of serum muscle enzymes, myalgia and/or muscle weakness, not caused by exercise, injury, endocrine causes, medicines or infection.

Supplementary Table S5. Machine learning-based models of the classification criteria combined with additional non-redundant criteria and non-criteria features

Model	Method ¹	Brief description/model features	AUC ²	ACC	SENS	SPEC
M1	LR	ACR-1997 criteria (binary variable)	89.28	89.28	85.55	93.01
M4	Lasso-LR	ACR-1997 criteria (binary variable), low C3 or C4, maculopapular rash	94.90	91.76	93.27	90.26
M5	RF	ACR-1997 criteria plus all non-redundant features from other criteria and non-criteria features	95.07	91.64	93.02	90.26
M6	LR	ACR-1997 criteria (continuous score)	95.70	89.28	85.55	93.01
M8	Lasso-LR	ACR-1997 criteria (continuous score), alopecia, low C3 or C4, interstitial lung disease, maculopapular rash	97.44	92.39	93.27	91.51
M10	LR	SLICC-2012 (binary variable)	92.52	92.51	91.28	93.76
M12	RF	SLICC-2012 (binary variable) plus all non-redundant features from other criteria and non-criteria features	95.84	93.26	92.52	94.01
M13	LR	SLICC-2012 (continuous clinical and immunological scores)	97.34	92.51	94.26	90.76
M15	Lasso-LR	SLICC-2012 (continuous clinical and immunological scores), lymphopenia <1000/ μ L	97.61	92.89	93.51	92.26
M17	LR	EULAR/ACR-2019 (binary model)	92.27	92.27	87.29	97.26
M20	Lasso-LR	EULAR/ACR-2019 (binary model), photosensitivity, myositis, chronic CLE other than DLE	96.09	92.77	88.04	97.51
M22	LR	EULAR/ACR-2019 (continuous score), ANA	96.95	91.89	90.53	93.26
M25	Lasso-LR	EULAR/ACR-2019 (continuous score), ANA, livedo reticularis, interstitial lung disease	97.40	93.26	92.53	94.01
M26	RF	EULAR/ACR-2019 (continuous score), ANA plus all non-redundant features from other criteria and non-criteria features	97.90	92.89	91.28	94.51
M31	Lasso-LR	<i>De novo</i> model including: mucosal ulcers, synovitis, serositis, immunologic disorder (modified), ANA, alopecia, neurological disorder, malar/maculopapular rash, SCLE or DLE, leucopenia, thrombocytopenia or AIHA, proteinuria, low C3 and C4, interstitial lung disease	98.32	95.02	94.53	95.51

¹ LASSO-LR, Least Absolute Shrinkage and Selection Operator followed by Logistic Regression; RF, Random Forests

² Performance metrics are average values from the 10-fold cross-validation process during model construction in the discovery cohort (401 SLE patients, 401 disease controls); AUC, area under the receiver operating characteristic curve; ACC, accuracy; SENS, sensitivity; SPEC, specificity

SUPPLEMENTARY TABLE S3

	ACR97_malar_	ACR97_discoi	ACR97_photose	ACR97_ulcers_	ACR97_synoviti	ACR97_serosit	ACR97_renal_	ACR97_neuro	ACR97_hematol	ACR97_immuno	ACR97_ANA_
ACR97_malar_	0	0,691121427	2,09E-41	3,33E-07	2,26E-07	0,900231678	0,517235252	0,625516158	0,653330193	0,366210221	1,76E-11
ACR97_discoi	0,691121427	0	0,017488565	0,383038497	0,314053118	0,980235952	0,914209113	0,274152162	0,820242521	0,667629399	0,79646538
ACR97_photosens_	2,09E-41	0,017488565	0	1,58E-10	9,14E-05	0,397988151	0,067363449	0,686715312	0,256964179	0,407084348	9,74E-09
ACR97_ulcers_	3,33E-07	0,383038497	1,58E-10	0	0,115178182	0,284393976	0,982295858	0,629383382	0,339559055	0,08249779	0,332189196
ACR97_synovitis_	2,26E-07	0,314053118	9,14E-05	0,115178182	0	0,537205535	0,585640387	1,26E-05	0,67585716	0,25888022	9,73E-05
ACR97_serosit	0,900231678	0,980235952	0,397988151	0,284393976	0,537205535	0	0,033627463	0,186243767	0,007184916	0,086959649	0,582951355
ACR97_renal_	0,517235252	0,914209113	0,067363449	0,982295858	0,585640387	0,033627463	0	0,865801913	1,05E-06	1,75E-06	0,128685296
ACR97_neuro	0,625516158	0,274152162	0,686715312	0,629383382	1,26E-05	0,186243767	0,865801913	0	0,484295651	0,384907088	0,241152261
ACR97_hematol	0,653330193	0,820242521	0,256964179	0,339559055	0,67585716	0,007184916	1,05E-06	0,484295651	0	5,79E-07	4,53E-08
ACR97_immunol_	0,366210221	0,667629399	0,407084348	0,08249779	0,25888022	0,086959649	1,75E-06	0,384907088	5,79E-07	0	4,35E-22
ACR97_ANA_	1,76E-11	0,79646538	9,74E-09	0,332189196	9,73E-05	0,582951355	0,128685296	0,241152261	4,53E-08	4,35E-22	0
ACR97_items_	6,22E-86	1,26E-07	7,02E-75	2,02E-33	3,40E-37	4,34E-11	4,69E-14	0,070184868	5,30E-35	1,64E-42	5,61E-87
ACR97_	1,60E-71	0,026634927	1,66E-62	9,24E-22	2,10E-26	5,88E-06	7,69E-08	0,074219263	3,43E-18	6,17E-28	5,53E-51
SLICCACLE	3,01E-182	0,092860716	2,94E-93	6,97E-09	1,74E-07	0,910368186	0,524185561	0,717647077	0,785797772	0,053657655	5,72E-17
SLICC_CCLE	0,500014078	0	0,003102907	0,659043985	0,450431109	0,884102746	0,704615258	0,453072009	0,892400608	0,779755567	0,261459185
SLICC_Alopecia_	1,20E-23	0,757418434	3,50E-33	6,81E-10	1,96E-07	0,897112568	0,314356484	0,509841508	0,744151756	0,151398531	1,45E-05
SLICC_Ulcers_	5,22E-07	0,372056331	2,53E-10	0	0,125229683	0,294751073	9,99E-01	0,636143246	0,318293513	0,061621254	0,357519796
SLICC_Synovitis_	2,26E-07	0,314053118	9,14E-05	0,115178182	0	0,537205535	0,585640387	1,26E-05	0,67585716	0,25888022	9,73E-05
SLICC_Serosit	0,900231678	0,980235952	0,397988151	0,284393976	0,537205535	0	0,033627463	0,186243767	0,007184916	0,086959649	0,582951355
SLICC_Renal_	0,276130766	0,791817113	0,027345782	0,930278489	0,678899573	0,013415326	0	0,943709	1,00E-06	2,34E-07	0,054790325
SLICC_CNS_	0,454595793	0,514929558	0,944863436	0,595496957	0,000782535	0,048621364	0,303666841	1,32E-127	0,908605176	0,372446437	0,626388563
SLICC_AIHA_	0,247563618	0,293951961	0,206294395	0,243332428	0,176556029	0,005799213	0,243576146	0,567595293	5,61E-16	0,004059641	0,019737466
SLICC_Leucopenia_	0,012583636	0,860122297	0,620713041	0,066463636	0,3885259	0,023419638	8,01E-05	0,275193237	1,57E-134	1,55E-06	1,98E-06
SLICC_Thrombocytopenia_	0,117337506	0,596458105	0,164418134	0,389878115	0,173880791	0,009836251	1,87E-05	0,722963976	7,53E-91	0,000250311	0,002491741
SLICC_aDNA_	0,303436688	0,748198674	0,071829741	0,089462999	0,021737521	0,337547806	2,15E-06	0,588231166	1,35E-05	1,86E-176	3,76E-21
SLICC_aSm_	0,593937112	0,683091902	0,841381213	0,58426502	0,802437088	0,789655264	0,084558088	0,410721023	1,08E-06	7,92E-19	0,002627912
SLICC_aPL_	0,398207388	0,650578395	0,831080149	0,626697378	0,577749185	0,067152256	0,01630827	0,556259493	0,011361529	6,11E-98	0,000310615
SLICC_Comp_	0,219988444	0,716123183	0,160930574	0,887968285	0,874659659	0,72839152	1,76E-06	0,169367293	5,34E-09	1,38E-44	1,73E-11
SLICC_Coombs_	0,032038362	0,045767469	0,086705785	0,435274685	0,675246635	0,107091746	0,000124264	0,457891553	1,84E-10	2,44E-08	0,056745893
SLICC_ANA_	1,76E-11	0,79646538	9,74E-09	0,332189196	9,73E-05	0,582951355	0,128685296	0,241152261	4,53E-08	4,35E-22	0
SLICC_Kidney_bx_	0,94652129	0,942260834	0,008895425	0,786379425	0,37143556	0,353079002	2,37E-149	0,654545642	0,000447051	3,14E-10	0,007575199
SLICC_clinical_criteria_	4,04E-57	1,18E-08	1,15E-42	2,61E-49	6,46E-44	2,93E-16	4,69E-12	0,140833472	7,05E-37	0,000114645	2,03E-19
SLICC_immun_criteria_	0,002583353	0,655075588	0,383505506	0,950196007	0,027247307	0,24730121	4,46E-08	0,228840765	1,30E-16	1,06E-193	3,12E-113
SLICC_criteria_fulfil_	5,17E-24	0,061511948	8,17E-15	2,48E-13	9,81E-16	0,003138372	6,27E-07	0,536792264	1,60E-19	9,16E-50	3,22E-95
SLICC_classified_criteria_	1,66E-24	0,068336237	1,29E-14	1,66E-13	1,32E-15	0,003818766	1,16E-08	0,553821454	4,28E-19	6,54E-49	2,22E-93
EULAR_fever_	0,058824245	0,04616997	0,000472703	0,915231724	0,09931734	4,09E-12	0,060963333	0,423803776	0,12156886	0,624565445	0,020981392
Fever_score	0,058824245	0,04616997	0,000472703	0,915231724	0,09931734	4,09E-12	0,060963333	0,423803776	0,12156886	0,624565445	0,020981392
EULAR_cut_A_	3,32E-23	0,201027119	9,28E-36	7,03E-100	3,13E-07	0,810558061	0,363027271	0,538161514	0,695856635	0,080291304	7,91E-06
EULAR_cut_B_	0	0,616644487	1,98E-52	7,82E-09	2,00E-07	0,691428276	0,666160565	0,380022671	0,581351675	0,236361588	4,77E-13
EULAR_cut_C_	0,000984871	7,89E-125	5,55E-09	0,355492192	0,857154704	0,422062995	0,690908553	0,138867985	0,808424259	0,459486223	0,583983878
Cutaneous_score	3,18E-269	6,18E-07	3,45E-70	3,31E-18	1,20E-07	0,988428449	0,406085836	0,881060652	0,601312209	0,268547848	5,37E-16
EULAR_synovitis_	6,68E-08	0,35279941	0,000190628	0,121323414	0	0,650788089	0,533666789	1,68E-05	0,664092026	0,258293842	0,000234531
Synovitis_score	6,68E-08	0,35279941	0,000190628	0,121323414	0	0,650788089	0,533666789	1,68E-05	0,664092026	0,258293842	0,000234531
EULAR_neuro_A_	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

EULAR_neuro_B_	0,699434423	0,243600565	0,361483825	0,731846271	0,160348803	0,435083262	0,345411129	3,41E-92	0,735999589	0,597781845	0,456638914
EULAR_neuro_C_	0,583873445	0,689281064	0,654419249	0,626867084	2,72E-06	0,268096194	0,845615194	1,36E-256	0,360882413	0,05805538	0,290886632
Neuro_score	0,596345959	0,380273491	0,919438712	0,614960113	3,12E-06	0,195682867	0,968328233	0	0,419565673	0,198185904	0,23935901
EULAR_serousitis_A_	0,958671164	0,821711847	0,235541233	0,106674678	0,112106008	1,04E-122	0,917381498	0,382447949	0,065219647	0,914710406	0,400131478
EULAR_serousitis_B_	0,852633951	0,976191407	0,774104809	0,918167283	0,531799605	6,48E-175	0,013299962	0,322398348	0,011872896	0,078541515	0,364158905
Serositis_score	0,951637375	0,981174733	0,399887567	0,303139373	0,405605478	0	0,039592643	0,196637727	0,003915974	0,122896089	0,846159111
EULAR_hem_A_	0,005450384	0,724912056	0,832605766	0,032763496	1,00E+00	0,47904805	0,000680127	0,073905873	3,17E-104	6,63E-07	3,33E-08
EULAR_hem_B_	0,116527626	0,472365916	0,128713475	0,302207824	0,072373034	0,003138969	0,000102783	0,820023065	2,15E-102	6,54E-05	0,000498625
Hem_score	0,248467162	0,403467895	0,833831463	0,453081208	0,159099788	0,030132511	0,00014946	0,18510597	1,26E-243	5,30E-08	7,18E-09
EULAR_renal_A_	0,38926724	0,578456661	0,030237816	0,85628852	0,780429483	0,031585499	1,25E-245	0,908286435	1,32E-05	5,35E-09	0,03854938
EULAR_renal_B_	0,993046845	0,274152162	0,287176313	0,491454507	0,198928134	0,71054069	9,71E-52	0,578759527	0,00227745	0,001922749	0,088563459
EULAR_renal_C_	0,650087561	0,2449189	0,048115258	0,624305434	0,819337198	0,139683452	8,02E-81	0,313630307	0,035127276	2,64E-08	0,199839188
Renal_score	0,524862697	0,601379417	0,020508853	0,903942901	0,695845688	0,061880108	1,76E-221	0,698854461	6,00E-05	1,18E-10	0,034502638
EULAR_aPL_	0,490404284	0,682688386	0,97665565	0,537417785	0,501346329	0,116345124	0,036623678	0,536420633	0,015492139	1,87E-95	0,000204734
aPL_score	0,490404284	0,682688386	0,97665565	0,537417785	0,501346329	0,116345124	0,036623678	0,536420633	0,015492139	1,87E-95	0,000204734
EULAR_hypocmpl_A_	0,000498134	0,764669384	0,061691472	0,030651316	0,240195261	0,563354406	0,783748774	0,209398794	0,176312798	0,001714547	0,002878958
EULAR_hypocmpl_B_	0,25045964	0,274213118	0,000626798	0,112025444	0,444054922	0,706451593	1,51E-09	0,007077268	5,53E-10	2,86E-48	3,66E-09
Hypocmpl_score	0,42297005	0,402181688	0,046684224	0,834954642	0,946529528	0,966820158	1,10E-07	0,080979985	1,62E-10	2,19E-50	3,31E-12
EULAR_spec_autoAbs_	0,153703548	0,931358763	0,10225981	0,050989409	0,028469756	0,221627188	2,66E-06	0,991047496	1,96E-06	2,47E-200	5,07E-22
Autoabs_score	0,153703548	0,931358763	0,10225981	0,050989409	0,028469756	0,221627188	2,66E-06	0,991047496	1,96E-06	2,47E-200	5,07E-22
EULAR_ACR_score_	1,58E-43	0,162390383	2,96E-09	0,001615934	1,73E-50	2,77E-21	1,99E-30	0,129743099	3,80E-28	2,84E-81	2,55E-32
EULAR_ACR_classified_	4,28E-34	0,330382736	7,95E-12	0,088679574	7,64E-27	0,004073463	0,000102393	0,283341803	3,59E-12	2,65E-41	1,71E-137
fatigue_	0,013330001	0,891937249	0,105451895	0,00078737	0,922357768	0,027187096	0,096319794	0,127247681	0,049598662	0,039791969	0,00013518
lymphaden_	0,939951524	0,837486136	0,216518003	0,040905509	0,079662246	0,00026723	0,422554631	0,269107158	0,038605305	0,064094635	0,310844186
sicca_	0,510171261	0,364899302	0,001016129	0,002788016	0,214988545	0,043860071	0,029581154	0,078707534	0,089082951	0,011566608	0,000906724
demographism_	0,001428747	0,214400367	0,001195901	0,00905814	0,013410056	0,363651639	0,167729718	0,015934008	0,080422238	0,497401213	0,465477905
skin_vascul_	0,505760068	0,526930302	0,086471817	0,35671063	0,70071077	0,034891766	0,004532006	0,51708392	0,051415637	0,629559296	0,981933549
livedo_	0,013179415	0,652695938	0,001660881	0,182531421	0,650404102	0,901135329	0,615719978	0,794935001	0,919225553	0,013206761	0,027045939
urticaria_	0,079590027	0,733862524	0,033666002	0,089378221	0,365460406	0,297139059	0,479737994	0,473547562	0,901141123	0,240751019	0,136511572
ascites_	0,785181369	0,670827663	0,519451063	0,350489875	0,744861035	0,000542441	0,070969816	0,816912292	0,649371508	0,775685087	0,919686355
hepatitis_	0,034826787	0,547159455	0,925292671	0,185928177	0,154344691	0,435083262	0,503572399	0,742964385	0,735999589	0,181758948	0,10257168
mes_vasculit_	0,404065708	0,806363723	0,33604834	0,59030172	0,084755266	0,001632181	0,785363345	0,893776083	0,062632124	0,092530258	0,506457014
enteropathy_	0,237675177	0,728714343	0,956914944	0,446142486	0,418752125	0,045484269	0,699979324	0,85014366	0,447490027	0,400575897	0,55288318
pneumonitis_	0,749789595	0,413739437	0,045908801	0,284674004	0,024026713	0,299239092	0,138774456	0,65618438	0,073293176	0,547629849	0,08400281
ILD_	0,004082567	0,165414211	0,011573295	0,193897855	0,028938277	0,466753491	0,538158479	0,450036672	0,198006798	0,198879315	0,029482874
alv_hemorrhage_	0,51310592	0,623409544	0,053807165	0,280715269	0,993355283	0,524385561	6,22E-08	0,000377176	0,011409304	0,276146294	0,053948802
TTP_	0,404065708	0,806363723	0,299071886	0,59030172	0,084755266	0,001632181	0,785363345	0,893776083	0,062632124	0,55249361	0,506457014
Splenomegaly_	0,657595676	0,867437852	0,527824906	0,392166056	0,893824285	3,52E-07	3,08E-07	0,602390877	1,65E-06	0,00257027	0,820520119
epi_scleritis_	0,797528635	0,728714343	0,956914944	0,446142486	0,412011174	0,652959467	0,699979324	0,85014366	0,447490027	0,400575897	0,033236987
uveitis_	0,011828419	0,460204868	0,025696063	6,29E-05	0,034950858	0,338309969	0,411911988	0,687490022	0,415161056	0,073323106	0,002038639
myocarditis_	0,716459989	0,623409544	0,053807165	0,280715269	0,252252603	4,52E-06	0,153400351	0,789104349	0,011409304	0,276146294	0,806225126
aRNP_	0,020029952	0,54948967	0,486204097	0,67056987	0,734951182	0,243408553	0,181948739	0,042945007	0,000407362	5,79E-09	0,002947206
aSSA_	0,669447478	0,681797388	0,751923067	0,136366069	0,627610181	0,038654997	0,572567857	0,381223645	8,51E-06	0,03446154	2,87E-08
aSSB_	0,771348184	0,737830966	0,795562073	0,684459161	0,460287478	0,275933665	0,560723635	0,364796187	0,000166943	0,052908653	0,001478037
Raynaud_	0,000498713	0,126238249	5,59E-05	0,924899668	0,10312382	0,148764378	0,017813546	0,294650735	0,225453719	0,387618376	3,92E-10
Myositis_	0,023663724	0,280661377	0,146009451	0,207320088	0,908455958	0,161840294	0,230643552	0,55681994	0,887483625	0,11856882	0,110635628

ACR97_items_	ACR97_	SLICC_ACLE_	SLICC_CCLE_	SLICC_Alopecie	SLICC_Ulcers_	SLICC_Synoviti	SLICC_Serositis	SLICC_Renal_	SLICC_CNS_	SLICC_AIHA_	SLICC_Leucop	SLICC_Thrombc
6,22E-86	1,60E-71	3,01E-182	0,500014078	1,20E-23	5,22E-07	2,26E-07	0,900231678	0,276130766	0,454595793	0,247563618	0,012583636	0,117337506
1,26E-07	0,026634927	0,092860716	0	0,757418434	0,372056331	0,314053118	0,980235952	0,791817113	0,514929558	0,293951961	0,860122297	0,596458105
7,02E-75	1,66E-62	2,94E-93	0,003102907	3,50E-33	2,53E-10	9,14E-05	0,397988151	0,027345782	0,944863436	0,206294395	0,627713041	0,164418134
2,02E-33	9,24E-22	6,97E-09	0,659043985	6,81E-10	0	0,115178182	0,284393976	0,930278489	0,595496957	0,243332428	0,066463636	0,389878115
3,40E-37	2,10E-26	1,74E-07	0,450431109	1,96E-07	0,125229683	0	0,537205535	0,678899573	0,000782535	0,176556029	0,3885259	0,173880791
4,34E-11	5,88E-06	0,910368186	0,884102746	0,897112568	0,294751073	0,537205535	0	0,013415326	0,048621364	0,005799213	0,023419638	0,009836251
4,69E-14	7,69E-08	0,524185561	0,704615258	0,314356484	9,99E-01	0,585640387	0,033627463	0	0,303666841	0,243576146	8,01E-05	1,87E-05
0,070184868	0,074219263	0,717647077	0,453072009	0,509841508	0,636143246	1,26E-05	0,186243767	0,943709	1,32E-127	0,567595293	0,275193237	0,722963976
5,30E-35	3,43E-18	0,785797772	0,892400608	0,744151756	0,318293513	0,67585716	0,007184916	1,00E-06	0,908605176	5,61E-16	1,57E-134	7,53E-91
1,64E-42	6,17E-28	0,053657655	0,779755567	0,151398531	0,061621254	0,25888022	0,086959649	2,34E-07	0,372446437	0,004059641	1,55E-06	0,000250311
5,61E-87	5,53E-51	5,72E-17	0,261459185	1,45E-05	0,357519796	9,73E-05	0,582951355	0,054790325	0,626388563	0,019737466	1,98E-06	0,002491741
0	4,75E-241	5,00E-93	1,83E-07	3,41E-24	8,63E-33	3,40E-37	4,34E-11	6,34E-13	0,709152053	0,031390789	2,28E-26	1,38E-09
4,75E-241	0	5,34E-71	0,011540257	7,32E-15	1,78E-21	2,10E-26	5,88E-06	9,66E-08	0,782444822	0,133139668	2,79E-13	3,01E-05
5,00E-93	5,34E-71	0	0,035082172	2,27E-22	1,01E-08	1,74E-07	0,910368186	0,390231861	0,696296801	0,068973228	0,178948749	0,650638473
1,83E-07	0,011540257	0,035082172	0	0,316337683	0,643172709	0,450431109	0,884102746	0,490031577	0,812017486	0,236136606	0,956112406	0,300423587
3,41E-24	7,32E-15	2,27E-22	0,316337683	0	1,34E-09	1,96E-07	0,897112568	0,167634896	0,566084413	0,423915406	0,221473146	0,671719665
8,63E-33	1,78E-21	1,01E-08	0,643172709	1,34E-09	0	0,125229683	0,294751073	0,914324935	0,60556251	0,246860955	0,060686302	0,402814538
3,40E-37	2,10E-26	1,74E-07	0,450431109	1,96E-07	0,125229683	0	0,537205535	0,678899573	0,000782535	0,176556029	0,3885259	0,173880791
4,34E-11	5,88E-06	0,910368186	0,884102746	0,897112568	0,294751073	0,537205535	0	0,013415326	0,048621364	0,005799213	0,023419638	0,009836251
6,34E-13	9,66E-08	0,390231861	0,490031577	0,167634896	0,914324935	0,678899573	0,013415326	0	0,820482703	0,267457125	0,000127829	2,24E-06
0,709152053	0,782444822	0,696296801	0,812017486	0,566084413	0,60556251	0,000782535	0,048621364	0,820482703	0	0,394016042	0,978256657	0,801209904
0,031390789	0,133139668	0,068973228	0,236136606	0,423915406	0,246860955	0,176556029	0,005799213	0,267457125	0,394016042	0	0,031005864	1,40E-09
2,28E-26	2,79E-13	0,178948749	0,956112406	0,221473146	0,060686302	0,3885259	0,023419638	0,000127829	0,978256657	0,031005864	0	5,76E-10
1,38E-09	3,01E-05	0,650638473	0,300423587	0,671719665	0,402814538	0,173880791	0,009836251	2,24E-06	0,801209904	1,40E-09	5,76E-10	0
3,38E-28	3,21E-19	0,108267134	0,395320802	0,7540267	0,060950671	0,021737521	0,337547806	7,35E-07	0,701411438	0,001344351	5,77E-05	0,133760458
8,85E-07	4,51E-05	0,126247674	0,908659215	0,992213518	0,574905162	0,802437088	0,789655264	0,264940473	0,994028497	0,47752558	8,27E-10	0,278102722
1,10E-11	2,95E-07	0,982908935	0,97058682	0,075495026	0,647273369	0,577749185	0,067152256	0,042947295	0,699445869	0,234067008	0,08203456	4,07E-05
5,86E-15	1,10E-07	0,179868678	0,535446873	0,328157838	0,995847272	0,874659659	0,72839152	5,93E-08	0,105470242	3,92E-05	2,36E-07	2,35E-06
0,00018672	0,103598304	0,628766093	0,134925732	0,07037983	0,426755982	0,675246635	0,107091746	3,35E-05	0,352105898	0,460580574	2,22E-06	3,73E-10
5,61E-87	5,53E-51	5,72E-17	0,261459185	1,45E-05	0,357519796	9,73E-05	0,582951355	0,054790325	0,626388563	0,019737466	1,98E-06	0,002491741
1,52E-10	5,84E-07	0,696296801	0,679473804	0,215367215	0,774270752	0,37143556	0,353079002	6,65E-190	0,607944884	0,394016042	0,003064511	0,000144849
1,00E-228	1,03E-113	4,98E-88	1,86E-10	1,30E-81	3,16E-49	6,46E-44	2,93E-16	3,70E-13	0,009190823	0,001106763	1,42E-43	3,52E-20
2,28E-75	7,48E-42	5,71E-06	0,224993328	0,29774438	0,856358502	0,027247307	0,24730121	7,15E-09	0,347431606	0,000261227	2,82E-13	7,81E-09
9,25E-145	2,08E-123	1,21E-34	0,008407723	7,56E-28	4,04E-13	9,81E-16	0,003138372	1,69E-07	0,506173585	0,000218047	1,05E-16	1,32E-10
5,87E-145	1,67E-122	6,08E-35	0,009819091	1,19E-28	2,71E-13	1,32E-15	0,003818766	2,06E-09	0,530957174	0,000241538	5,54E-17	1,98E-10
0,317329997	0,560639865	0,042276032	0,092823235	0,015212231	0,892395412	0,09931734	4,09E-12	0,148873868	0,795731755	0,18874293	0,034249903	0,304019094
0,317329997	0,560639865	0,042276032	0,092823235	0,015212231	0,892395412	0,09931734	4,09E-12	0,148873868	0,795731755	0,18874293	0,034249903	0,304019094
6,70E-46	2,00E-27	1,58E-27	0,158169477	5,03E-195	4,08E-99	3,13E-07	0,810558061	0,285288229	0,937900778	0,421724625	0,130687884	0,886100005
3,26E-85	3,02E-66	1,26E-254	0,550542528	6,08E-25	1,23E-08	2,00E-07	0,691428276	0,434004877	0,511516758	0,121194516	0,007714743	0,166173393
1,33E-09	0,000351916	4,67E-11	1,38E-112	0,001103789	0,340134413	0,857154704	0,422062995	0,596107997	0,768511466	0,114503663	0,641139937	0,938660796
2,79E-107	7,33E-74	2,03E-266	2,32E-06	6,73E-41	6,04E-18	1,20E-07	0,988428449	0,231663444	0,892681272	0,04204497	0,009772493	0,343804812
2,93E-36	2,32E-25	3,28E-08	0,503368778	4,40E-07	0,131923267	0	0,650788089	0,625559707	0,001031722	0,192341036	0,41596169	0,208271675
2,93E-36	2,32E-25	3,28E-08	0,503368778	4,40E-07	0,131923267	0	0,650788089	0,625559707	0,001031722	0,192341036	0,41596169	0,208271675
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

0,188122261	0,09286104	0,548415626	0,362257527	0,309008986	0,735999589	0,160348803	0,435083262	0,294545435	9,14E-38	0,735653041	0,87964256	0,432252313
0,179749025	0,221649981	0,753647292	0,869616091	0,08935779	0,632424838	2,72E-06	0,268096194	0,770172675	8,98E-82	0,631960703	0,206958883	0,376078919
0,087832627	0,099909201	0,901797792	0,574924849	0,282987577	0,621476696	3,12E-06	0,195682867	0,950394404	1,43E-120	0,575770723	0,230837396	0,570803764
0,000595876	0,004648985	0,595315399	0,568741273	0,641617724	0,109653215	0,112106008	1,04E-122	0,78335076	0,19272025	0,143572714	0,090410987	0,51275108
2,28E-08	0,001069667	0,849072901	0,869308191	0,988833419	0,903503154	0,531799605	6,48E-175	0,005501268	0,139972008	0,031769477	0,02763997	0,011080161
1,09E-10	9,11E-06	0,761956222	0,902352487	0,87072767	0,313703822	0,405605478	0	0,016524972	0,054076525	0,005481493	0,013890882	0,010301751
4,88E-24	6,78E-13	0,128738932	0,74930914	0,53776102	0,030001086	1,00E+00	0,47904805	0,000470852	0,740844463	0,020330807	5,79E-262	1,22E-09
3,50E-10	5,55E-05	0,467542708	0,217642477	0,605899397	0,313664555	0,072373034	0,003138969	1,51E-05	0,68032498	1,48E-35	4,14E-12	0
1,72E-27	5,66E-14	0,286389337	0,267828858	0,711353329	0,429362558	0,159099788	0,030132511	4,39E-05	0,967536434	8,92E-21	8,23E-113	2,23E-164
1,59E-11	2,06E-07	0,274089773	0,361902313	0,394500535	0,841842833	0,780429483	0,031585499	0	0,968523718	0,955336617	0,002462131	4,02E-06
3,52E-06	0,005658995	0,717647077	0,453072009	0,353204948	0,484295651	0,198928134	0,71054069	6,52E-67	0,654545642	0,567595293	0,003047497	0,00389638
1,75E-05	6,98E-05	0,669248299	0,189316	0,025368928	0,632062253	0,819337198	0,139683452	3,42E-91	0,857325362	0,51441719	0,124717072	0,003255267
2,73E-11	1,49E-07	0,438141414	0,386499365	0,21735096	0,91761531	0,695845688	0,061880108	4,88E-292	0,814813797	0,650776178	0,002189196	2,10E-05
2,18E-11	2,48E-07	0,849827386	0,927892275	0,061507237	0,556278626	0,501346329	0,116345124	0,090943411	0,726094301	0,220681363	0,109794881	2,73E-05
2,18E-11	2,48E-07	0,849827386	0,927892275	0,061507237	0,556278626	0,501346329	0,116345124	0,090943411	0,726094301	0,220681363	0,109794881	2,73E-05
2,94E-05	0,004551393	0,021493701	0,425476014	0,044290735	0,056201008	0,240195261	0,563354406	0,599864342	0,583184557	0,199023923	0,053673842	0,322483552
3,36E-10	1,74E-05	0,955985146	0,07682856	0,008720664	0,118396633	0,444054922	0,706451593	1,90E-12	0,129530758	8,31E-05	8,40E-07	1,53E-07
8,04E-16	3,21E-08	0,246438153	0,24001456	0,225012349	0,747280954	0,946529528	0,966820158	1,34E-09	0,092014351	1,90E-05	2,71E-08	1,09E-07
4,19E-31	1,38E-21	0,056972012	0,368745437	0,845309414	0,033924792	0,028469756	0,221627188	8,20E-07	0,530219091	0,002744188	1,91E-06	0,145849011
4,19E-31	1,38E-21	0,056972012	0,368745437	0,845309414	0,033924792	0,028469756	0,221627188	8,20E-07	0,530219091	0,002744188	1,91E-06	0,145849011
3,54E-200	5,32E-109	1,63E-46	0,107475948	9,59E-10	0,002273392	1,73E-50	2,77E-21	5,75E-34	0,53744771	0,00104765	6,24E-26	1,00E-15
1,21E-131	8,15E-112	2,18E-39	0,288063489	9,54E-08	0,102931857	7,64E-27	0,004073463	4,34E-05	0,539351571	0,006855914	8,80E-10	1,98E-06
9,20E-07	1,16E-05	0,00112946	0,680977359	0,012531508	0,001122555	0,922357768	0,027187096	0,020031608	0,751897492	0,071154313	0,020873765	0,973740172
0,098559469	0,238371827	0,627032768	0,779534177	0,184010343	0,038605305	0,079662246	0,00026723	0,605481894	0,959268937	0,437655432	0,980213893	0,003822932
0,25579713	0,391452849	0,075139332	0,227693274	0,000612414	0,004924644	0,214988545	0,043860071	0,052803594	0,77481397	0,85839946	0,485460413	0,081293909
0,004804243	0,006426112	0,002654399	0,161049367	0,00137159	0,008621101	0,013410056	0,363651639	0,189554331	0,269467986	0,48635239	0,690618293	0,822379055
0,222145837	0,473044108	0,516546747	0,766567652	0,185100724	0,349702508	0,70071077	0,034891766	0,002001188	0,333999732	0,504782487	0,013306793	0,175755498
0,001697899	0,013527809	0,001210045	0,185180381	0,000994141	0,17472393	0,650404102	0,901135329	0,765678438	0,256733178	0,562046654	0,523397662	0,352454881
0,026242278	0,044245897	0,067885409	0,99632065	0,327640961	0,086386766	0,365460406	0,297139059	0,547535843	0,285148759	0,460580574	0,749841657	0,691864882
0,450493955	0,543156866	0,461654696	0,077177001	0,179015365	0,351918287	0,744861035	0,000542441	0,05353652	0,729938922	0,811605284	0,530105429	0,151011346
0,285081667	0,389057197	0,154991489	0,496792222	0,450864171	0,187235155	0,154344691	0,435083262	0,524706	0,624862145	0,735653041	0,373798745	0,432252313
0,663438536	0,309065936	0,274089773	0,782027101	0,504393656	0,591402278	0,084755266	0,001632181	0,795638441	0,84218833	0,890658437	0,039469111	0,74916286
0,274962217	0,980207972	0,121623508	0,01823701	0,557862274	0,447490027	0,418752125	0,045484269	0,714013531	0,778164753	0,845772699	0,492155675	0,650958385
0,01674807	0,039011252	0,225132804	0,356215687	0,025861656	0,287612054	0,024026713	0,299239092	0,102782853	0,506799041	0,646710935	0,105375035	0,286299507
0,000129831	0,008273229	0,001097522	0,117376195	0,071303208	0,198006798	0,028938277	0,466753491	0,431176377	0,259970797	0,436764665	0,022334813	0,939547617
0,789095238	0,971983736	0,235740376	0,57940829	0,180986439	0,28214232	0,993355283	0,524385561	0,000301602	0,026753439	0,783029464	0,004327773	0,278462664
0,663438536	0,309065936	0,361034053	0,782027101	0,504393656	0,591402278	0,084755266	0,001632181	0,795638441	0,84218833	1,77E-13	0,627378513	0,001744108
0,001054207	0,015893655	0,340337255	0,945124681	0,723622056	0,396750083	0,893824285	3,52E-07	0,001042398	0,437251567	0,164787701	4,60E-05	3,43E-05
0,274962217	0,164543506	0,898580132	0,695433377	0,034099631	0,447490027	0,412011174	0,652959467	0,714013531	0,778164753	0,845772699	0,492155675	0,650958385
0,003326403	0,003031635	0,008620443	0,404495337	0,19797877	5,93E-05	0,034950858	0,338309969	0,435198042	0,548627143	0,678768312	0,14345767	0,335334539
0,383305555	0,300043895	0,856810045	0,57940829	0,180986439	0,28214232	0,252252603	4,52E-06	0,122969797	0,690025066	0,000579271	0,004327773	0,004906451
0,000146985	0,001338981	0,132330738	0,391924373	0,336492063	0,680288978	0,734951182	0,243408553	0,431176377	0,437334918	0,436764665	2,56E-06	0,939547617
0,009011625	0,053045509	0,727264678	0,58254777	0,66022695	0,142992359	0,627610181	0,038654997	0,464351	0,561939697	0,442694225	0,000139215	0,982578057
0,007391839	0,096633185	0,349155635	0,60342712	0,418778951	0,67168445	0,460287478	0,275933665	0,883908035	0,176496971	0,350799361	0,009538694	0,563959184
0,000582128	0,003744657	0,000534037	0,262260979	0,0092755	0,979494569	0,10312382	0,148764378	0,049341748	0,514646462	0,690317515	0,976918804	0,079868702
0,002867961	0,003302734	0,274089773	0,223289457	0,014693372	0,210520706	0,908455958	0,161840294	0,254309187	0,380930248	0,545227417	0,826380001	0,159262935

SLICC_aDNA_	SLICC_aSm_	SLICC_aPL_	SLICC_CompI_	SLICC_Coombs	SLICC_ANA_	SLICC_Kidney_	SLICC_clinical_	SLICC_immun_	SLICC_criteria_	SLICC_classifie	EULAR_fever_	Fever__score
0,303436688	0,593937112	0,398207388	0,219988444	0,032038362	1,76E-11	0,94652129	4,04E-57	0,002583353	5,17E-24	1,66E-24	0,058824245	0,058824245
0,748198674	0,683091902	0,650578395	0,716123183	0,045767469	0,79646538	0,942260834	1,18E-08	0,655075588	0,061511948	0,068336237	0,04616997	0,04616997
0,071829741	0,841381213	0,831080149	0,160930574	0,086705785	9,74E-09	0,008895425	1,15E-42	0,383505506	8,17E-15	1,29E-14	0,000472703	0,000472703
0,089462999	0,58426502	0,626697378	0,887968285	0,435274685	0,332189196	0,786379425	2,61E-49	0,950196007	2,48E-13	1,66E-13	0,915231724	0,915231724
0,021737521	0,802437088	0,577749185	0,874659659	0,675246635	9,73E-05	0,37143556	6,46E-44	0,027247307	9,81E-16	1,32E-15	0,09931734	0,09931734
0,337547806	0,789655264	0,067152256	0,72839152	0,107091746	0,582951355	0,353079002	2,93E-16	0,24730121	0,003138372	0,003818766	4,09E-12	4,09E-12
2,15E-06	0,084558088	0,01630827	1,76E-06	0,000124264	0,128685296	2,37E-149	4,69E-12	4,46E-08	6,27E-07	1,16E-08	0,060963333	0,060963333
0,588231166	0,410721023	0,556259493	0,169367293	0,457891553	0,241152261	0,654545642	0,140833472	0,228840765	0,536792264	0,553821454	0,423803776	0,423803776
1,35E-05	1,08E-06	0,011361529	5,34E-09	1,84E-10	4,53E-08	0,000447051	7,05E-37	1,30E-16	1,60E-19	4,28E-19	0,12156886	0,12156886
1,86E-176	7,92E-19	6,11E-98	1,38E-44	2,44E-08	4,35E-22	3,14E-10	0,000114645	1,06E-193	9,16E-50	6,54E-49	0,624565445	0,624565445
3,76E-21	0,002627912	0,000310615	1,73E-11	0,056745893	0	0,007575199	2,03E-19	3,12E-113	3,22E-95	2,22E-93	0,020981392	0,020981392
3,38E-28	8,85E-07	1,10E-11	5,86E-15	0,00018672	5,61E-87	1,52E-10	1,00E-228	2,28E-75	9,25E-145	5,87E-145	0,317329997	0,317329997
3,21E-19	4,51E-05	2,95E-07	1,10E-07	0,103598304	5,53E-51	5,84E-07	1,03E-113	7,48E-42	2,08E-123	1,67E-122	0,560639865	0,560639865
0,108267134	0,126247674	0,982908935	0,179868678	0,628766093	5,72E-17	0,696296801	4,98E-88	5,71E-06	1,21E-34	6,08E-35	0,042276032	0,042276032
0,395320802	0,908659215	0,97058682	0,535446873	0,134925732	0,261459185	0,679473804	1,86E-10	0,224993328	0,008407723	0,009819091	0,092823235	0,092823235
0,7540267	0,992213518	0,075495026	0,328157838	0,07037983	1,45E-05	0,215367215	1,30E-81	0,29774438	7,56E-28	1,19E-28	0,015212231	0,015212231
0,060950671	0,574905162	0,647273369	0,995847272	0,426755982	0,357519796	0,774270752	3,16E-49	0,856358502	4,04E-13	2,71E-13	0,892395412	0,892395412
0,021737521	0,802437088	0,577749185	0,874659659	0,675246635	9,73E-05	0,37143556	6,46E-44	0,027247307	9,81E-16	1,32E-15	0,09931734	0,09931734
0,337547806	0,789655264	0,067152256	0,72839152	0,107091746	0,582951355	0,353079002	2,93E-16	0,24730121	0,003138372	0,003818766	4,09E-12	4,09E-12
7,35E-07	0,264940473	0,042947295	5,93E-08	3,35E-05	0,054790325	6,65E-190	3,70E-13	7,15E-09	1,69E-07	2,06E-09	0,148873868	0,148873868
0,701411438	0,994028497	0,699445869	0,105470242	0,352105898	0,626388563	0,607944884	0,009190823	0,347431606	0,506173585	0,530957174	0,795731755	0,795731755
0,001344351	0,47752558	0,234067008	3,92E-05	0,460580574	0,019737466	0,394016042	0,001106763	0,000261227	0,000218047	0,000241538	0,18874293	0,18874293
5,77E-05	8,27E-10	0,08203456	2,36E-07	2,22E-06	1,98E-06	0,003064511	1,42E-43	2,82E-13	1,05E-16	5,54E-17	0,034249903	0,034249903
0,133760458	0,278102722	4,07E-05	2,35E-06	3,73E-10	0,002491741	0,000144849	3,52E-20	7,81E-09	1,32E-10	1,98E-10	0,304019094	0,304019094
0	9,16E-09	6,46E-07	3,41E-34	1,30E-06	3,76E-21	5,49E-09	0,000233336	6,33E-135	1,94E-35	6,28E-35	0,527964588	0,527964588
9,16E-09	0	0,329454335	5,70E-06	3,29E-10	0,002627912	0,037353307	0,004401997	8,58E-27	3,34E-06	3,89E-06	0,000380231	0,000380231
6,46E-07	0,329454335	0	1,92E-17	0,000249607	0,000310615	0,008916202	0,213373416	4,83E-67	3,73E-19	7,46E-19	0,948222297	0,948222297
3,41E-34	5,70E-06	1,92E-17	0	5,82E-11	1,73E-11	5,15E-11	1,89E-05	5,32E-148	7,49E-41	3,43E-40	0,29165377	0,29165377
1,30E-06	3,29E-10	0,000249607	5,82E-11	0	0,056745893	8,00E-05	4,31E-06	1,16E-31	1,16E-06	1,37E-06	0,007072767	0,007072767
3,76E-21	0,002627912	0,000310615	1,73E-11	0,056745893	0	0,007575199	2,03E-19	3,12E-113	3,22E-95	2,22E-93	0,020981392	0,020981392
5,49E-09	0,037353307	0,008916202	5,15E-11	8,00E-05	0,007575199	0	6,78E-09	1,19E-12	4,36E-07	1,51E-09	0,201440923	0,201440923
0,000233336	0,004401997	0,213373416	1,89E-05	4,31E-06	2,03E-19	6,78E-09	0	1,97E-15	1,96E-94	1,00E-96	0,79165119	0,79165119
6,33E-135	8,58E-27	4,83E-67	5,32E-148	1,16E-31	3,12E-113	1,19E-12	1,97E-15	0	8,10E-117	1,68E-114	0,590844278	0,590844278
1,94E-35	3,34E-06	3,73E-19	7,49E-41	1,16E-06	3,22E-95	4,36E-07	1,96E-94	8,10E-117	0	0	0,361900141	0,361900141
6,28E-35	3,89E-06	7,46E-19	3,43E-40	1,37E-06	2,22E-93	1,51E-09	1,00E-96	1,68E-114	0	0	0,325263942	0,325263942
0,527964588	0,000380231	0,948222297	0,29165377	0,007072767	0,020981392	0,201440923	0,79165119	0,590844278	0,361900141	0,325263942	0	0
0,527964588	0,000380231	0,948222297	0,29165377	0,007072767	0,020981392	0,201440923	0,79165119	0,590844278	0,361900141	0,325263942	0	0
0,327164832	0,973888264	0,158811132	0,581017297	0,049530372	7,91E-06	0,549028137	3,42E-109	0,246662532	3,17E-35	8,18E-36	0,29355128	0,29355128
0,15434651	0,218518224	0,411375776	0,224014061	0,276564647	4,77E-13	0,748658415	5,11E-68	0,00309925	1,60E-25	6,18E-26	0,231986042	0,231986042
0,735251653	0,945149635	0,776255563	0,655337405	0,70217657	0,583983878	0,768511466	3,55E-14	0,812398692	0,014182284	0,017231373	0,031072551	0,031072551
0,152845816	0,350621129	0,500030685	0,321104895	0,703748904	5,37E-16	0,534032982	3,47E-99	6,99E-05	3,58E-34	1,59E-34	0,163866855	0,163866855
0,015759022	0,765939812	0,509327165	0,963867016	0,714378293	0,000234531	0,343314019	1,25E-43	0,038601615	4,54E-15	5,96E-15	0,07927495	0,07927495
0,015759022	0,765939812	0,509327165	0,963867016	0,714378293	0,000234531	0,343314019	1,25E-43	0,038601615	4,54E-15	5,96E-15	0,07927495	0,07927495
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

0,997285724	0,683650916	0,344863663	0,765614975	0,672062523	0,456638914	0,099686842	0,094825289	0,837498858	0,945465152	0,933359144	0,36073088	0,36073088
0,996149427	0,22333429	0,208686041	0,016523788	0,257764086	0,290886632	0,412036779	0,630482492	0,043165977	0,287264569	0,297059895	0,682365724	0,682365724
0,719901609	0,315936177	0,388890741	0,070180999	0,359023124	0,239935901	0,545492214	0,246028373	0,119495504	0,418523791	0,433080892	0,493071895	0,493071895
0,728005326	0,921349722	0,415813179	0,132603033	0,259498913	0,400131478	0,638096866	1,88E-07	0,344125766	0,115783121	0,12540814	0,000613812	0,000613812
0,198520433	0,727656432	0,161831158	0,549788345	0,00288943	0,364158905	0,134289531	7,36E-11	0,068911648	0,008123094	0,00928692	1,09E-10	1,09E-10
0,482606248	0,835359062	0,055747301	0,72476273	0,163018109	0,846159111	0,390984178	1,74E-16	0,354302485	0,002359891	0,00287237	3,37E-12	3,37E-12
8,42E-07	4,38E-09	0,097237462	1,67E-09	3,85E-08	3,33E-08	0,001351299	2,14E-30	1,00E-16	2,35E-15	9,54E-16	0,254114509	0,254114509
0,027175367	0,366704459	0,000297057	2,77E-07	4,20E-09	0,000498625	0,00049081	1,11E-20	9,04E-10	9,35E-12	1,47E-11	0,185626484	0,185626484
5,00E-05	0,000145313	0,001294361	8,36E-13	3,81E-11	7,18E-09	0,000878389	1,35E-39	6,25E-19	2,77E-21	1,85E-21	0,303482487	0,303482487
1,57E-08	0,574378211	0,001426034	2,33E-11	1,86E-06	0,03854938	4,58E-214	7,56E-11	4,80E-12	2,62E-07	2,13E-09	0,431671576	0,431671576
0,036873507	0,019382652	0,556259493	0,010341765	0,000240022	0,088563459	1,32E-127	2,42E-08	0,000736095	0,002142133	5,53E-05	0,487108978	0,487108978
1,52E-09	0,060012424	0,007377452	2,46E-12	0,002309445	0,199839188	2,20E-139	0,00147424	4,00E-11	0,000169876	3,08E-05	0,832586827	0,832586827
1,09E-09	0,063797337	0,002539008	1,33E-13	9,47E-06	0,034502638	0	7,51E-10	1,09E-13	1,85E-07	1,06E-09	0,494717354	0,494717354
1,33E-06	0,310591838	0	3,78E-17	0,001683052	0,000204734	0,030250532	0,272011828	2,74E-65	1,25E-18	2,47E-18	0,994904183	0,994904183
1,33E-06	0,310591838	0	3,78E-17	0,001683052	0,000204734	0,030250532	0,272011828	2,74E-65	1,25E-18	2,47E-18	0,994904183	0,994904183
0,000994014	0,553156682	0,219254252	7,38E-83	0,250673387	0,002878958	0,508527632	0,002341583	1,41E-21	3,72E-15	5,98E-15	0,50879627	0,50879627
3,80E-33	5,09E-07	3,13E-23	3,94E-167	2,43E-12	3,66E-09	9,91E-18	0,001886774	1,51E-102	9,17E-23	2,01E-22	0,069010969	0,069010969
1,86E-36	1,09E-06	2,83E-21	0	2,96E-12	3,31E-12	2,01E-13	5,04E-06	7,16E-154	2,41E-41	1,09E-40	0,19344613	0,19344613
0	1,41E-30	5,88E-07	2,39E-34	5,35E-06	5,07E-22	2,86E-09	6,48E-05	1,51E-142	4,42E-38	1,59E-37	0,297703215	0,297703215
0	1,41E-30	5,88E-07	2,39E-34	5,35E-06	5,07E-22	2,86E-09	6,48E-05	1,51E-142	4,42E-38	1,59E-37	0,297703215	0,297703215
2,26E-81	6,19E-13	5,58E-17	2,76E-62	1,91E-10	2,55E-32	2,71E-40	4,88E-139	2,84E-121	3,87E-109	1,26E-111	1,40E-05	1,40E-05
1,42E-42	4,09E-06	1,47E-07	7,41E-22	0,012656585	1,71E-137	1,56E-05	1,64E-54	9,51E-101	1,00E-165	1,49E-161	0,675631498	0,675631498
0,003826956	0,046196456	0,880143189	0,003940934	0,041319804	0,00013518	0,038557646	1,55E-06	2,64E-05	5,34E-06	5,54E-06	5,14E-12	5,14E-12
0,062312207	0,008564664	0,774302978	0,326294442	0,096982236	0,310844186	0,707691831	0,355127178	0,036301796	0,421682406	0,451801367	6,86E-21	6,86E-21
0,122461087	0,281747042	0,0334148	0,291544698	0,505279265	0,000906724	0,091532866	0,148270836	0,670142568	0,182181016	0,210290223	0,179944547	0,179944547
0,241440517	0,680120326	0,283740574	0,837343199	0,382728247	0,465477905	0,313307884	0,003069825	0,932532286	0,201725742	0,212943592	0,2056489	0,2056489
0,641810846	0,617495722	0,515949947	0,603411443	0,673018945	0,981933549	0,217130755	0,014767656	0,709791323	0,35794096	0,373777372	2,18E-09	2,18E-09
0,205972493	0,470723697	0,00180567	0,033945893	0,420715802	0,027045939	0,892731696	0,002469616	0,005165104	5,68E-05	7,16E-05	0,43269459	0,43269459
0,226847163	0,13864179	0,356920172	0,005728445	0,827204519	0,136511572	0,944908045	0,211644217	0,047303996	0,077069917	0,082744042	0,129030165	0,129030165
0,436402278	0,773589937	0,50488894	0,058252914	0,001595397	0,919686355	0,729938922	0,110273931	0,257034951	0,596479662	0,603875632	0,518795994	0,518795994
0,270224733	0,683650916	0,006503669	0,091319461	0,672062523	0,10257168	0,624862145	0,916907707	0,019693795	0,453252667	0,462377637	0,112166929	0,112166929
0,0249999	0,868220371	0,700563718	0,057245579	0,863150044	0,506457014	0,84218833	0,777007988	0,123844289	0,331051739	0,334049698	0,709821338	0,709821338
0,527921409	0,814388454	0,586337278	0,330878546	0,807316183	0,55288318	0,778164753	0,688604686	0,743866732	0,968563138	0,961574704	0,59853099	0,59853099
0,136780225	0,580128575	0,599603625	0,308913416	0,56549899	0,08400281	0,506799041	0,00692637	0,115260279	0,026662888	0,025249547	1,29E-07	1,29E-07
0,292014137	0,347903247	0,586870484	0,011259797	0,909681425	0,029482874	0,259970797	0,000196483	0,014713357	0,001086661	0,000956521	0,494611484	0,494611484
0,652050656	0,739616408	0,469910714	0,871554009	0,729887783	0,053948802	0,026753439	0,6044664136	0,643674434	0,955507062	0,945623227	0,020441924	0,020441924
0,655554195	0,868220371	0,700563718	0,599142841	0,863150044	0,506457014	0,84218833	0,245404342	0,817380477	0,331051739	0,334049698	0,007178913	0,007178913
0,722948603	2,71E-05	8,05E-05	0,002676118	6,38E-05	0,820520119	0,000963746	0,000314562	0,000500618	0,086797769	0,091284636	7,94E-07	7,94E-07
0,527921409	0,814388454	0,586337278	0,457000117	0,807316183	0,033236987	0,778164753	0,912249308	0,114306777	0,145779084	0,143287712	0,59853099	0,59853099
0,178850745	0,617176002	0,246523852	0,440300994	0,603565917	0,002038639	0,548627143	0,039066819	0,013297587	0,015109605	0,014327542	0,355080296	0,355080296
0,652050656	0,005609755	0,441061094	0,871554009	0,729887783	0,806225126	0,690025066	0,108777308	0,672109545	0,344356802	0,350631966	0,020441924	0,020441924
8,63E-08	1,05E-90	0,586870484	0,019259352	0,021833235	0,002947206	0,083763918	0,050254133	2,44E-11	0,000228307	0,000261455	0,214644962	0,214644962
0,004847908	0,001121716	0,245330906	0,028386782	0,243426868	2,87E-08	0,963506669	0,765053721	1,83E-05	0,007599525	0,009277661	0,525117798	0,525117798
0,126425022	3,81E-06	0,218437231	0,011930014	0,001478037	0,796981819	0,164720302	0,231227901	0,000285245	0,001322417	0,001527814	0,762285132	0,762285132
0,431413338	0,28734551	0,108009428	0,31286976	0,029739467	3,92E-10	0,164720302	0,177356791	0,000515906	0,001077795	0,001008613	0,025334993	0,025334993
0,179756669	0,465304067	0,316380929	0,079709069	0,448142087	0,110635628	0,380930248	0,005837644	0,024588708	0,000309759	0,00027775	0,627230154	0,627230154

EULAR_cut_A	EULAR_cut_B	EULAR_cut_C	Cutaneous_scr	EULAR_synovitis	Synovitis_score	EULAR_neuro_1	EULAR_neuro_2	EULAR_neuro_3	Neuro_score	EULAR_serositi	EULAR_serositi	Serositis_score
3,32E-23	0	0,000984871	3,18E-269	6,68E-08	6,68E-08	NaN	0,699434423	0,583873445	0,596345959	0,958671164	0,852633951	0,951637375
0,201027119	0,616644487	7,89E-125	6,18E-07	0,35279941	0,35279941	NaN	0,243600565	0,689281064	0,380273491	0,821711847	0,976191407	0,981174733
9,28E-36	1,98E-52	5,55E-09	3,45E-70	0,000190628	0,000190628	NaN	0,361483825	0,654419249	0,654419249	0,235541233	0,774104809	0,399887567
7,03E-100	7,82E-09	0,355492192	3,31E-18	0,121323414	0,121323414	NaN	0,731846271	0,626867084	0,614960113	0,106674678	0,918167283	0,303139373
3,13E-07	2,00E-07	0,857154704	1,20E-07	0	0	NaN	0,160348803	2,72E-06	3,12E-06	0,112106008	0,531799605	0,405605478
0,810558061	0,691428276	0,422062995	0,988428449	0,650788089	0,650788089	NaN	0,435083262	0,268096194	0,195682867	1,04E-122	6,48E-175	0
0,363027271	0,666160565	0,690908553	0,406085836	0,533666789	0,533666789	NaN	0,345411129	0,845615194	0,968328233	0,917381498	0,013299962	0,039592643
0,538161514	0,380022671	0,138867985	0,881060652	1,68E-05	1,68E-05	NaN	3,41E-92	1,36E-256	0	0,382447949	0,322398348	0,196637727
0,695856635	0,581351675	0,808424259	0,601312209	0,664092026	0,664092026	NaN	0,735999589	0,360882413	0,419565673	0,065219647	0,011872896	0,003915974
0,080291304	0,236361588	0,459486223	0,268547848	0,258293842	0,258293842	NaN	0,597781845	0,05805538	0,198185904	0,914710406	0,078541515	0,122896089
7,91E-06	4,77E-13	0,583983878	5,37E-16	0,000234531	0,000234531	NaN	0,456638914	0,290886632	0,239935901	0,400131478	0,364158905	0,846159111
6,70E-46	3,26E-85	1,33E-09	2,79E-107	2,93E-36	2,93E-36	NaN	0,188122261	0,179749025	0,087832627	0,000595876	2,28E-08	1,09E-10
2,00E-27	3,02E-66	0,000351916	7,33E-74	2,32E-25	2,32E-25	NaN	0,09286104	0,221649981	0,099900921	0,004648985	0,001069667	9,11E-06
1,58E-27	1,26E-254	4,67E-11	2,03E-266	3,28E-08	3,28E-08	NaN	0,548415626	0,753647292	0,901797792	0,595315399	0,849072901	0,761956222
0,158169477	0,550542528	1,38E-112	2,32E-06	0,503668778	0,503668778	NaN	0,158169477	0,550542528	1,38E-112	2,32E-06	0,503668778	0,503668778
5,03E-195	6,08E-25	0,001103789	6,73E-41	4,40E-07	4,40E-07	NaN	0,309008986	0,08935779	0,282987577	0,641617724	0,988833419	0,87072767
4,08E-99	1,23E-08	0,340134413	6,04E-18	0,131923267	0,131923267	NaN	0,735999589	0,632424838	0,621476696	0,109653215	0,903503154	0,313703822
3,13E-07	2,00E-07	0,857154704	1,20E-07	0	0	NaN	0,160348803	2,72E-06	3,12E-06	0,112106008	0,531799605	0,405605478
0,810558061	0,691428276	0,422062995	0,988428449	0,650788089	0,650788089	NaN	0,435083262	0,268096194	0,195682867	1,04E-122	6,48E-175	0
0,285288229	0,434004877	0,596107997	0,231663444	0,625559707	0,625559707	NaN	0,294545435	0,770172675	0,950394404	0,78335076	0,005501268	0,016524972
0,937900778	0,511516758	0,768511466	0,892681272	0,001031722	0,001031722	NaN	9,14E-38	8,98E-82	1,43E-120	0,19272025	0,139972008	0,054076525
0,421724625	0,121194516	0,114503663	0,04204497	0,192341036	0,192341036	NaN	0,735653041	0,631960703	0,575770723	0,143572714	0,031769477	0,005481493
0,130687884	0,007714743	0,641139937	0,009772493	0,41596169	0,41596169	NaN	0,487964256	0,206958883	0,230837396	0,090410987	0,02763997	0,013890882
0,886100005	0,166173393	0,938660796	0,343804812	0,208271675	0,208271675	NaN	0,432252313	0,376078919	0,570803764	0,51275108	0,011080161	0,010301751
0,327164832	0,15434651	0,735251653	0,152845816	0,015759022	0,015759022	NaN	0,997285724	0,996149427	0,719901609	0,728005326	0,198520433	0,482606248
0,973888264	0,218518224	0,945149635	0,350621129	0,765939812	0,765939812	NaN	0,683650916	0,22333429	0,315936177	0,921349722	0,727656432	0,835359062
0,158811132	0,411375776	0,776255563	0,500030685	0,509327165	0,509327165	NaN	0,344863663	0,208686041	0,388890741	0,415813179	0,161831158	0,055747301
0,581017297	0,224014061	0,655337405	0,321104895	0,963867016	0,963867016	NaN	0,765614975	0,016523788	0,070180999	0,132603033	0,549788345	0,72476273
0,049530372	0,276564647	0,70217657	0,703748904	0,714378293	0,714378293	NaN	0,672062523	0,257764086	0,359023124	0,259498913	0,00288943	0,163018109
7,91E-06	4,77E-13	0,583983878	5,37E-16	0,000234531	0,000234531	NaN	0,456638914	0,290886632	0,239935901	0,400131478	0,364158905	0,846159111
0,549028137	0,748658415	0,768511466	0,534032982	0,343314019	0,343314019	NaN	0,099686842	0,412036779	0,545492214	0,638096866	0,134289531	0,390984178
3,42E-109	5,11E-68	3,55E-14	3,47E-99	1,25E-43	1,25E-43	NaN	0,094825289	0,630482492	0,246028373	1,88E-07	7,36E-11	1,74E-16
0,246662532	0,000309925	0,812398692	6,99E-05	0,038601615	0,038601615	NaN	0,837498858	0,043165977	0,119495504	0,344125766	0,068911648	0,354302485
3,17E-35	1,60E-25	0,014182284	3,58E-34	4,54E-15	4,54E-15	NaN	0,945465152	0,287264569	0,418523791	0,115783121	0,008123094	0,002359891
8,18E-36	6,18E-26	0,017231373	1,59E-34	5,96E-15	5,96E-15	NaN	0,933359144	0,297059895	0,433080892	0,12540814	0,00928692	0,00287237
0,29355128	0,231986042	0,031072551	0,163866855	0,07927495	0,07927495	NaN	0,36073088	0,682365724	0,493071895	0,000613812	1,09E-10	3,37E-12
0,29355128	0,231986042	0,031072551	0,163866855	0,07927495	0,07927495	NaN	0,36073088	0,682365724	0,493071895	0,000613812	1,09E-10	3,37E-12
0	1,08E-26	0,000430687	9,45E-56	4,58E-07	4,58E-07	NaN	0,714244918	0,214621467	0,382296608	0,865564765	0,596891672	0,763572547
1,08E-26	0	0,001623115	0	5,12E-08	5,12E-08	NaN	0,538512582	0,382859028	0,36248927	0,801388165	0,96048923	0,747749512
0,000430687	0,001623115	0	2,50E-17	0,943728171	0,943728171	NaN	0,10610862	0,614553685	0,240653105	0,128784763	0,436222503	0,293762657
9,45E-56	0	2,50E-17	0	3,69E-08	3,69E-08	NaN	0,673938882	0,647100498	0,942976161	0,861863878	0,684231952	0,886582393
4,58E-07	5,12E-08	0,943728171	3,69E-08	0	0	NaN	0,169710707	3,63E-06	4,25E-06	0,100543186	0,581039576	0,358295993
4,58E-07	5,12E-08	0,943728171	3,69E-08	0	0	NaN	0,169710707	3,63E-06	4,25E-06	0,100543186	0,581039576	0,358295993
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

0,714244918	0,538512582	0,10610862	0,673938882	0,169710707	0,169710707	NaN	0	0,000595072	7,26E-46	0,605969268	0,558943437	0,445777449
0,214621467	0,382859028	0,614553685	0,647100498	3,63E-06	3,63E-06	NaN	0,000595072	0	0	0,464268723	0,407023052	0,279323563
0,382296608	0,36248927	0,264653105	0,942976161	4,25E-06	4,25E-06	NaN	7,26E-46	0	0	0,392540756	0,332685201	0,206225858
0,865564765	0,801388165	0,128784763	0,861863878	0,100543186	0,100543186	NaN	0,605969268	0,464268723	0,392540756	0	0,000662039	2,89E-169
0,596891672	0,96048923	0,436222503	0,684231952	0,581039576	0,581039576	NaN	0,558943437	0,407023052	0,332685201	0,000662039	0	5,90E-148
0,763572547	0,747749512	0,293762657	0,886582393	0,358295993	0,358295993	NaN	0,445777449	0,279323563	0,206225858	2,89E-169	5,90E-148	0
0,286544605	0,008454022	0,856835354	0,013800957	0,928940217	0,928940217	NaN	0,870868187	0,059081313	0,058022991	0,688610325	0,30196501	0,466838489
0,960328765	0,140133772	0,81045155	0,228562384	0,091361196	0,091361196	NaN	0,410353121	0,449200565	0,664041976	0,327084924	0,00660759	0,00311679
0,427254917	0,276430472	0,650479876	0,274992682	0,159524239	0,159524239	NaN	0,705469786	0,089938069	0,129482367	0,699346349	0,031840433	0,027370591
0,426443594	0,331258401	0,624683419	0,159056556	0,728900142	0,728900142	NaN	0,209948734	0,632168952	0,798234922	0,408460765	0,00076405	0,051209747
0,173271753	0,917759238	0,97892716	0,977618691	0,18781082	0,18781082	NaN	0,742964385	0,641768136	0,58677249	0,382447949	0,238014598	0,786171973
0,056390662	0,972241841	0,807944776	0,736873569	0,855307354	0,855307354	NaN	0,017543449	0,156279728	0,22983937	0,941024971	0,081808714	0,155738314
0,286896183	0,549115151	0,898972523	0,313924406	0,648750344	0,648750344	NaN	0,095274352	0,430640595	0,580847084	0,538795905	0,00485557	0,086586165
0,147721441	0,515810972	0,829704177	0,599411897	0,436843788	0,436843788	NaN	0,349324938	0,197924999	0,371957164	0,389864183	0,304701361	0,093443246
0,147721441	0,515810972	0,829704177	0,599411897	0,436843788	0,436843788	NaN	0,349324938	0,197924999	0,371957164	0,389864183	0,304701361	0,093443246
0,01390788	0,000208143	0,544589908	0,000315203	0,468176038	0,468176038	NaN	0,458545509	0,292932744	0,219146778	0,411063623	0,858436709	0,584937512
0,013024812	0,177655702	0,18469193	0,147532257	0,518293191	0,518293191	NaN	0,808562634	0,000161006	0,001357792	0,493836718	0,383873596	0,703850313
0,407302951	0,451370812	0,375219718	0,542624898	0,94103634	0,94103634	NaN	0,853132019	0,004686508	0,02651723	0,289985693	0,482005964	0,950750157
0,283959818	0,085728756	0,680806042	0,10912122	0,020549732	0,020549732	NaN	0,94451833	0,508869833	0,810743713	0,907813822	0,159909278	0,323387529
0,283959818	0,085728756	0,680806042	0,10912122	0,020549732	0,020549732	NaN	0,94451833	0,508869833	0,810743713	0,907813822	0,159909278	0,323387529
1,28E-12	1,47E-52	0,000684954	3,25E-59	1,96E-52	1,96E-52	NaN	0,441018765	0,06859268	0,091127735	1,45E-09	2,72E-14	1,01E-22
1,60E-09	4,19E-38	0,049867313	1,91E-44	3,83E-28	3,83E-28	NaN	0,929325453	0,105871296	0,187276628	0,128748887	0,009706127	0,003064333
0,003021591	0,023204769	0,144259673	0,00953462	0,973673207	0,973673207	NaN	0,453579692	0,287613697	0,157727054	0,864265748	0,049422436	0,069601168
0,476945972	0,932833448	0,50845934	0,795567929	0,095937281	0,095937281	NaN	0,513985193	0,354460779	0,279312863	0,034428519	0,008748588	0,000199489
2,22E-05	0,404432696	0,06888167	0,293085611	0,174511029	0,174511029	NaN	0,299259054	0,14075164	0,085214719	0,152349449	0,052138313	0,027754618
0,002589793	0,002126866	0,530026748	0,00066545	0,041162057	0,041162057	NaN	0,68962742	0,001929153	0,005708973	0,9536699	0,22811966	0,426141483
0,172809956	0,845288331	0,418215104	0,847258528	0,668530569	0,668530569	NaN	0,701981565	0,587226864	0,525938032	0,308114129	0,009565373	0,234593602
0,000617587	0,065202712	0,110340863	0,009287906	0,713750241	0,713750241	NaN	0,483597125	0,915984723	0,8937347	0,248277387	0,620661855	0,725622367
0,115081327	0,046648925	0,835520589	0,087296778	0,341640878	0,341640878	NaN	0,672062523	0,548129463	0,482902941	0,259498913	0,669263027	0,291762114
0,399479527	0,664129696	0,522849245	0,739288175	0,758621034	0,758621034	NaN	0,89122585	0,846172323	0,820696845	0,715730006	2,14E-06	0,001572407
0,197581184	0,064430851	0,365397632	0,107121384	0,615658845	0,615658845	NaN	0,846410612	0,783474833	0,748185402	0,605969268	0,558943437	0,445777449
0,389040281	0,358035248	0,712503278	0,24563507	0,088189144	0,088189144	NaN	0,937133914	0,910908978	0,895997338	0,83364243	2,49E-05	0,003864147
0,832918021	0,193332982	0,602074175	0,259070895	0,42901395	0,42901395	NaN	0,911140082	0,874203383	0,853259284	0,766323342	0,00501619	0,068537367
0,02371484	0,527159477	0,219085808	0,219617487	0,003608305	0,003608305	NaN	0,792583694	0,709112643	0,66296489	0,483736492	0,05793019	0,367650555
0,021820847	0,002620557	0,336463042	0,000690543	0,034093958	0,034093958	NaN	0,655500524	0,526775202	0,459625909	0,532969374	0,591351804	0,821889451
0,084276723	0,402849442	0,460383672	0,217254384	0,978286582	0,978286582	NaN	3,29E-10	1,55E-05	6,80E-05	0,673951089	0,633603377	0,534020624
0,389040281	0,358035248	0,712503278	0,24563507	0,088189144	0,088189144	NaN	0,937133914	0,910908978	0,895997338	0,83364243	2,49E-05	0,003864147
0,464012549	0,556628488	0,334850135	0,445490965	0,923618461	0,923618461	NaN	0,758300902	0,662441761	0,610046468	0,077714183	1,13E-06	6,82E-07
0,100672588	0,905591509	0,602074175	0,679056231	0,40690601	0,40690601	NaN	0,911140082	0,874203383	0,853259284	0,766323342	0,736349293	0,660474073
0,03215387	0,005541981	0,266826555	0,072561612	0,038541479	0,038541479	NaN	0,812187538	0,736055991	0,693726742	0,526880388	0,473432992	0,349600478
0,084276723	0,866660839	0,460383672	0,887140458	0,262793096	0,262793096	NaN	0,874463823	0,822653096	0,793438462	0,673951089	4,18E-10	2,73E-05
0,654831162	0,033741197	0,198420796	0,054757198	0,696386244	0,696386244	NaN	0,655500524	0,007605636	0,019005131	0,23468197	0,591351804	0,24055506
0,772718203	0,995432424	0,314184661	0,651682325	0,704782968	0,704782968	NaN	0,659655577	0,532112316	0,414220972	0,072614783	0,428693751	0,042255259
0,311555235	0,379817175	0,076165648	0,189358043	0,424527723	0,424527723	NaN	0,59248175	0,447628713	0,374973492	0,153884226	0,804910267	0,261905976
0,091459692	0,001960995	0,210043878	0,008062107	0,099398512	0,099398512	NaN	0,819190455	0,111211416	0,195992964	0,303471961	0,107411837	0,13522326
0,016893893	0,007935929	0,104711208	0,001094661	0,941979977	0,941979977	NaN	0,728553804	0,622468813	0,565148095	0,355311394	0,294977845	0,171770146

EULAR_hem_A	EULAR_hem_B	Hem__score	EULAR_renal_A	EULAR_renal_B	EULAR_renal_C	Renal__score	EULAR_aPL_	aPL__score	EULAR_hypoco	EULAR_hypoco	Hypocompl__sc	EULAR_spec_a
0,005450384	0,116527626	0,248467162	0,38926724	0,993046845	0,650087561	0,524862697	0,490404284	0,490404284	0,000498134	0,25045964	0,42297005	0,153703548
0,724912056	0,472365916	0,403467895	0,578456661	0,274152162	0,2449189	0,601379417	0,682688386	0,682688386	0,764669384	0,274213118	0,402181688	0,931358763
0,832605766	0,128713475	0,833831463	0,030237816	0,287176313	0,048115258	0,020508853	0,97665565	0,97665565	0,061691472	0,000626798	0,046684224	0,10225981
0,032763496	0,302207824	0,453081208	0,85628852	0,491454507	0,624305434	0,903942901	0,537417785	0,537417785	0,030651316	0,112025444	0,834954642	0,050989409
1,00E+00	0,072373034	0,159099788	0,780429483	0,198928134	0,819337198	0,695845688	0,501346329	0,501346329	0,240195261	0,444054922	0,946529528	0,028469756
0,47904805	0,003138969	0,030132511	0,031585499	0,71054069	0,139683452	0,061880108	0,116345124	0,116345124	0,563354406	0,706451593	0,966820158	0,221627188
0,000680127	0,000102783	0,00014946	1,25E-245	9,71E-52	8,02E-81	1,76E-221	0,036623678	0,036623678	0,783748774	1,51E-09	1,10E-07	2,66E-06
0,073905873	0,820023065	0,18510597	0,908286435	0,578759527	0,313630307	0,698854461	0,536420633	0,536420633	0,209398794	0,007077268	0,080979985	0,991047496
3,17E-104	2,15E-102	1,26E-243	1,32E-05	0,00227745	0,035127276	6,00E-05	0,015492139	0,015492139	0,176312798	5,53E-10	1,62E-10	1,96E-06
6,63E-07	6,54E-05	5,30E-08	5,35E-09	0,001922749	2,64E-08	1,18E-10	1,87E-95	1,87E-95	0,001714547	2,86E-48	2,19E-50	2,47E-200
3,33E-08	0,000498625	7,18E-09	0,03854938	0,088563459	0,199839188	0,034502638	0,000204734	0,000204734	0,002878958	3,66E-09	3,31E-12	5,07E-22
4,88E-24	3,50E-10	1,72E-27	1,59E-11	3,52E-06	1,75E-05	2,73E-11	2,18E-11	2,18E-11	2,94E-05	3,36E-10	8,04E-16	4,19E-31
6,78E-13	5,55E-05	5,66E-14	2,06E-07	0,005658995	6,98E-05	1,49E-07	2,48E-07	2,48E-07	0,004551393	1,74E-05	3,21E-08	1,38E-21
0,128738932	0,467542708	0,286389337	0,274089773	0,717647077	0,669248299	0,438141414	0,849827386	0,849827386	0,021493701	0,955985146	0,246438153	0,056972012
0,74930914	0,217642477	0,267828858	0,361902313	0,453072009	0,189316	0,386499365	0,927892275	0,927892275	0,425476014	0,07682856	0,24001456	0,368745437
0,53776102	0,605899397	0,711353329	0,394500535	0,353204948	0,025368928	0,21735096	0,061507237	0,061507237	0,044290735	0,008720664	0,225012349	0,845309414
0,030001086	0,313664555	0,429362558	0,841842833	0,484295651	0,632062253	0,91761531	0,556278626	0,556278626	0,056201008	0,118396633	0,747280954	0,033924792
1,00E+00	0,072373034	0,159099788	0,780429483	0,198928134	0,819337198	0,695845688	0,501346329	0,501346329	0,240195261	0,444054922	0,946529528	0,028469756
0,47904805	0,003138969	0,030132511	0,031585499	0,71054069	0,139683452	0,061880108	0,116345124	0,116345124	0,563354406	0,706451593	0,966820158	0,221627188
0,000470852	1,51E-05	4,39E-05	0	6,52E-67	3,42E-91	4,88E-292	0,090943411	0,090943411	0,599864342	1,90E-12	1,34E-09	8,20E-07
0,740844463	0,68032498	0,967536434	0,968523718	0,654545642	0,857325362	0,814813797	0,726094301	0,726094301	0,583184557	0,129530758	0,092014351	0,530219091
0,020330807	1,48E-35	8,92E-21	0,955336617	0,567595293	0,51441719	0,650776178	0,220681363	0,220681363	0,199023923	8,31E-05	1,90E-05	0,002744188
5,79E-262	4,14E-12	8,23E-113	0,002462131	0,003047497	0,124717072	0,002189196	0,109794881	0,109794881	0,053673842	8,40E-07	2,71E-08	1,91E-06
1,22E-09	0	2,23E-164	4,02E-06	0,00389638	0,003255267	2,10E-05	2,73E-05	2,73E-05	0,322483552	1,53E-07	1,09E-07	0,145849011
8,42E-07	0,027175367	5,00E-05	1,57E-08	0,036873507	1,52E-09	1,09E-09	1,33E-06	1,33E-06	0,000994014	3,80E-33	1,86E-36	0
4,38E-09	0,366704459	0,000145313	0,574378211	0,019382652	0,060012424	0,063797337	0,310591838	0,310591838	0,553156682	5,09E-07	1,09E-06	1,41E-30
0,097237462	0,000297057	0,001294361	0,001426034	0,566259493	0,007377452	0,002539008	0	0	0,219254252	3,13E-23	2,83E-21	5,88E-07
1,67E-09	2,77E-07	8,36E-13	2,33E-11	0,010341765	2,46E-12	1,33E-13	3,78E-17	3,78E-17	7,38E-83	3,94E-167	0	2,39E-34
3,85E-08	4,20E-09	3,81E-11	1,86E-06	0,000240022	0,002309445	9,47E-06	0,001683052	0,001683052	0,250673387	2,43E-12	2,96E-12	5,35E-06
3,33E-08	0,000498625	7,18E-09	0,03854938	0,088563459	0,199839188	0,034502638	0,000204734	0,000204734	0,002878958	3,66E-09	3,31E-12	5,07E-22
0,001351299	0,00049081	0,000878389	4,58E-214	1,32E-127	2,20E-139	0	0,030250532	0,030250532	0,508527632	9,91E-18	2,01E-13	2,86E-09
2,14E-30	1,11E-20	1,35E-39	7,56E-11	2,42E-08	0,00147424	7,51E-10	0,272011828	0,272011828	0,002341583	0,001886774	5,04E-06	6,48E-05
1,00E-16	9,04E-10	6,25E-19	4,80E-12	0,000736095	4,00E-11	1,09E-13	2,74E-65	2,74E-65	1,41E-21	1,51E-102	7,16E-154	1,51E-142
2,35E-15	9,35E-12	2,77E-21	2,62E-07	0,002142133	0,000169876	1,85E-07	1,25E-18	1,25E-18	3,72E-15	9,17E-23	2,41E-41	4,42E-38
9,54E-16	1,47E-11	1,85E-21	2,13E-09	5,53E-05	3,08E-05	1,06E-09	2,47E-18	2,47E-18	5,98E-15	2,01E-22	1,09E-40	1,59E-37
0,254114509	0,185626484	0,303482487	0,431671576	0,487108978	0,832586827	0,494717354	0,994904183	0,994904183	0,50879627	0,069010969	0,19344613	0,297703215
0,254114509	0,185626484	0,303482487	0,431671576	0,487108978	0,832586827	0,494717354	0,994904183	0,994904183	0,50879627	0,069010969	0,19344613	0,297703215
0,286544605	0,960328765	0,427254917	0,426443594	0,173271753	0,056390662	0,286896183	0,147721441	0,147721441	0,01390788	0,013024812	0,407302951	0,283959818
0,008454022	0,140133772	0,276430472	0,331258401	0,917759238	0,972241841	0,549115151	0,515810972	0,515810972	0,000208143	0,177655702	0,451370812	0,085728756
0,856833534	0,81045155	0,650479876	0,624683419	0,97892716	0,807944776	0,898972523	0,829704177	0,829704177	0,544589908	0,18469193	0,375219718	0,680806042
0,013800957	0,228562384	0,274992682	0,159056556	0,977618691	0,736873569	0,313924406	0,599411897	0,599411897	0,000315203	0,147532257	0,542624898	0,10912122
0,928940217	0,091361196	0,159524239	0,728900142	0,18781082	0,855307354	0,648750344	0,436843788	0,436843788	0,468176038	0,518293191	0,94103634	0,020549732
0,928940217	0,091361196	0,159524239	0,728900142	0,18781082	0,855307354	0,648750344	0,436843788	0,436843788	0,468176038	0,518293191	0,94103634	0,020549732
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

0,870868187	0,410353121	0,705469786	0,209948734	0,742964385	0,017543449	0,095274352	0,349324938	0,349324938	0,458545509	0,808562634	0,853132019	0,94451833
0,059081313	0,449200565	0,089938069	0,632168952	0,641768136	0,156279728	0,430640595	0,197924999	0,197924999	0,292932744	0,000161006	0,004686508	0,508869833
0,058022991	0,664041976	0,129482367	0,798234922	0,58677249	0,22983937	0,580847084	0,371957164	0,371957164	0,219146778	0,001357792	0,02651723	0,810743713
0,688610325	0,327084924	0,699346349	0,408460765	0,382447949	0,941024971	0,538795905	0,389864183	0,389864183	0,411063623	0,493836718	0,289985693	0,907813822
0,30196501	0,00660759	0,031840433	0,00076405	0,238014598	0,081808714	0,00485557	0,304701361	0,304701361	0,858436709	0,383873596	0,482005964	0,159909278
0,466838489	0,00311679	0,027370591	0,051209747	0,786171973	0,155738314	0,086586165	0,093443246	0,093443246	0,584937512	0,703850313	0,950750157	0,323387529
0	1,73E-12	7,09E-161	0,000355133	0,012887687	0,018005783	0,000684823	0,140636515	0,140636515	0,14719707	1,58E-10	3,69E-11	7,10E-08
1,73E-12	0	4,23E-190	2,30E-05	0,007723305	0,006896187	9,67E-05	0,000208621	0,000208621	0,280180226	1,42E-08	9,24E-09	0,033980102
7,09E-161	4,23E-190	0	4,89E-05	0,018628998	0,009684815	0,000210074	0,001726262	0,001726262	0,079106054	6,05E-14	6,05E-15	2,12E-05
0,000355133	2,30E-05	4,89E-05	0	7,92E-72	7,58E-116	0	0,0047642	0,0047642	0,891337748	1,35E-16	1,59E-13	1,27E-07
0,012887687	0,007723305	0,018628998	7,92E-72	0	0,313630307	7,32E-81	0,536420633	0,536420633	0,710057485	0,000631284	0,003893549	0,010730601
0,018005783	0,006896187	0,009684815	7,58E-116	0,313630307	0	3,38E-211	0,037754738	0,037754738	0,366170376	7,64E-15	5,13E-14	9,52E-09
0,000684823	9,67E-05	0,000210074	0	7,32E-81	3,38E-211	0	0,010573639	0,010573639	0,98848245	1,75E-19	3,83E-16	1,09E-09
0,140636515	0,000208621	0,001726262	0,0047642	0,536420633	0,037754738	0,010573639	0	0	0,195220266	1,43E-22	7,27E-21	1,15E-06
0,140636515	0,000208621	0,001726262	0,0047642	0,536420633	0,037754738	0,010573639	0	0	0,195220266	1,43E-22	7,27E-21	1,15E-06
0,14719707	0,280180226	0,079106054	0,891337748	0,710057485	0,366170376	0,98848245	0,195220266	0,195220266	0	0,000814006	5,16E-49	0,001232438
1,58E-10	1,42E-08	6,05E-14	1,35E-16	0,000631284	7,64E-15	1,75E-19	1,43E-22	1,43E-22	0,000814006	0	3,05E-257	1,27E-33
3,69E-11	9,24E-09	6,05E-15	1,59E-13	0,003893549	5,13E-14	3,83E-16	7,27E-21	7,27E-21	5,16E-49	3,05E-257	0	9,73E-37
7,10E-08	0,033980102	2,12E-05	1,27E-07	0,010730601	9,52E-09	1,09E-09	1,15E-06	1,15E-06	0,001232438	1,27E-33	9,73E-37	0
7,10E-08	0,033980102	2,12E-05	1,27E-07	0,010730601	9,52E-09	1,09E-09	1,15E-06	1,15E-06	0,001232438	1,27E-33	9,73E-37	0
2,90E-27	1,19E-16	1,44E-33	2,51E-39	9,10E-14	2,33E-31	3,54E-46	3,48E-16	3,48E-16	6,56E-10	5,60E-52	6,32E-69	7,02E-89
2,59E-11	6,40E-07	1,45E-13	2,54E-05	0,010959488	0,004343409	3,16E-05	1,16E-07	1,16E-07	7,23E-05	3,16E-18	6,20E-24	2,70E-45
0,002438352	0,337343053	0,039179642	0,000972068	0,127247681	0,318851818	0,011725822	0,768367215	0,768367215	0,74747962	0,000593616	0,000879483	0,004571275
0,003878918	0,821248865	0,058917654	0,831222125	0,903821815	0,635248321	0,850558584	0,733862008	0,733862008	0,441129412	0,345576279	0,195639541	0,024594216
0,194150312	0,148621877	0,03956328	0,134251056	0,693281133	0,421887127	0,154288095	0,039399016	0,039399016	0,380739477	0,023878177	0,126609064	0,096636854
0,811168986	0,722847549	0,778134678	0,232903667	0,498946146	0,440566171	0,251402527	0,266672934	0,266672934	0,425479902	0,688987253	0,945891793	0,446360651
0,025881348	0,241796893	0,091894408	0,000332375	0,010248988	0,459935345	0,034718441	0,493878792	0,493878792	0,953000546	0,560534245	0,569969272	0,550379511
0,380495448	0,514369625	0,162849095	0,931502156	0,111171032	0,176003264	0,872150406	0,001385917	0,001385917	0,404464626	0,058530408	0,028702087	0,198246039
0,590984191	0,597214462	0,671341371	0,684518672	0,457891553	0,413633252	0,702095568	0,371138281	0,371138281	0,011195846	0,199939514	0,010180333	0,128594015
0,347866393	0,181924327	0,457806452	0,029215444	0,816912292	0,791726851	0,388040169	0,508819237	0,508819237	0,600774658	0,006406107	0,029659007	0,479775591
0,183536577	0,410353121	0,631407197	0,562961287	0,742964385	0,708376184	0,578092758	0,005861842	0,005861842	0,4613248	0,147899418	0,085661662	0,316798393
0,014465417	0,737488281	0,111092581	0,813802857	0,893776083	0,87894968	0,820848102	0,703188935	0,703188935	0,762809668	0,010645791	0,03230672	0,031277786
0,562831896	0,63530248	0,476476033	0,73894049	0,85014366	0,829378668	0,74864652	0,589789234	0,589789234	0,669356871	0,126559137	0,25159289	0,511257868
0,172589812	0,263658186	0,093235275	0,053711496	0,65618438	0,611604133	0,574101302	0,582830584	0,582830584	0,929814537	0,191533954	0,261104789	0,121495319
0,072775032	0,934848382	0,350120268	0,76356024	0,450036672	0,716965319	0,915133452	0,608594363	0,608594363	0,29439814	0,026580496	0,010135554	0,232270414
0,412649605	0,322914413	0,695576993	0,076631342	0,789104349	0,00220154	0,023246079	0,459281641	0,459281641	0,545466787	0,491017855	0,769990503	0,704105902
0,682590032	0,002828414	0,021800077	0,813802857	0,893776083	0,87894968	0,820848102	0,703188935	0,703188935	0,762809668	0,695358428	0,604385447	0,642491125
0,000310141	0,00010482	4,18E-06	0,009961832	0,000563263	0,249765878	0,005188693	0,001345429	0,001345429	0,009794236	0,125194018	0,004796122	0,111634258
0,562831896	0,63530248	0,476476033	0,73894049	0,85014366	0,829378668	0,74864652	0,589789234	0,589789234	0,669356871	0,579506678	0,463473035	0,511257868
0,217827406	0,312513375	0,1293826	0,477959007	0,687490022	0,646360201	0,49507406	0,250902907	0,250902907	0,363182598	0,845329494	0,501782064	0,161789977
0,04153527	0,00798557	0,00443228	0,076631342	0,789104349	0,760305027	0,525793171	0,445279406	0,445279406	0,228638499	0,432748159	0,967972815	0,090910176
5,71E-07	0,934848382	0,003788708	0,76356024	0,042945007	0,716965319	0,194863193	0,608594363	0,608594363	0,29439814	0,001577431	0,022458139	1,22E-15
6,25E-05	0,951665858	0,010025212	0,86587812	0,923715327	0,76796783	0,972881613	0,270542101	0,270542101	0,726898718	0,000379623	0,004649795	0,001257555
0,003209144	0,458588463	0,078786901	0,636776341	0,788924189	9,99E-01	0,759458912	0,231262964	0,231262964	0,064136311	0,019491219	0,001637908	0,036127651
0,359342136	0,126429953	0,516679925	0,368557086	0,571150202	0,036627841	0,148933736	0,081494308	0,081494308	0,05780635	0,924101876	0,240681768	0,199063945
0,631968842	0,1400551	0,213595268	0,299934329	0,55681994	0,502731933	0,318938446	0,326314326	0,326314326	0,184024431	0,297377942	0,095794681	0,150545678

Autoabs__score	EULAR_ACR_s	EULAR_ACR_c classified_	fatigue_	lymphaden_	sicca_	demographism_skin_vascul_	livedo_	urticaria_	ascites_	hepatitis_	mes_vasculit_	
0,153703548	1,58E-43	4,28E-34	0,013330001	0,939951524	0,510171261	0,001428747	0,505760068	0,013179415	0,079590027	0,785181369	0,034826787	0,404065708
0,931358763	0,162390383	0,330382736	0,891937249	0,837486136	0,364899302	0,214400367	0,526930302	0,652695938	0,733862524	0,670827663	0,547159455	0,806363723
0,10225981	2,96E-09	7,95E-12	0,105451895	0,216518003	0,001016129	0,001195901	0,086471817	0,001660881	0,033666002	0,519451063	0,925292671	0,33604834
0,050989409	0,001615934	0,088679574	0,00078737	0,040905509	0,002788016	0,00905814	0,35671063	0,182531421	0,089378221	0,350489875	0,185928177	0,59030172
0,028469756	1,73E-50	7,64E-27	0,922357768	0,079662246	0,214988545	0,013410056	0,70071077	0,650404102	0,365460406	0,744861035	0,154344691	0,084755266
0,221627188	2,77E-21	0,004073463	0,027187096	0,00026723	0,043860071	0,363651639	0,034891766	0,901135329	0,297139059	0,000542441	0,435083262	0,001632181
2,66E-06	1,99E-30	0,000102393	0,096319794	0,422554631	0,029581154	0,167729718	0,004532006	0,615719978	0,479737994	0,070969816	0,503572399	0,785363345
0,991047496	0,129743099	0,283341803	0,127247681	0,269107158	0,078707534	0,015934008	0,51708392	0,794935001	0,473547562	0,816912292	0,742964385	0,893776083
1,96E-06	3,80E-28	3,59E-12	0,049598662	0,038605305	0,089082951	0,080422238	0,051415637	0,919225553	0,901141123	0,649371508	0,735999589	0,062632124
2,47E-200	2,84E-81	2,65E-41	0,039791969	0,064094635	0,011566608	0,497401213	0,629559296	0,013206761	0,240751019	0,775685087	0,181758948	0,092530258
5,07E-22	2,56E-32	1,71E-137	0,00013518	0,310844186	0,000906724	0,465477905	0,981933549	0,021045939	0,136511572	0,919686355	0,10257168	0,506457014
4,19E-31	3,54E-200	1,21E-131	9,20E-07	0,098559469	0,25579713	0,004804243	0,222145837	0,001697899	0,026242278	0,450493955	0,285081667	0,663438536
1,38E-21	5,32E-109	8,15E-112	1,16E-05	0,238371827	0,391452849	0,006426112	0,473044108	0,013527809	0,044245897	0,543156866	0,389057197	0,309065936
0,056972012	1,63E-46	2,18E-39	0,00112946	0,627032768	0,075139332	0,002654399	0,516546747	0,001210045	0,067885409	0,461654696	0,154991489	0,274089773
0,368745437	0,107475948	0,288063489	0,680977359	0,779534177	0,227693274	0,161049367	0,766567652	0,185180381	0,99632065	0,077177001	0,496792222	0,782027101
0,845309414	9,59E-10	9,54E-08	0,012531508	0,184010343	0,000612414	0,00137159	0,185100724	0,000994141	0,327640961	0,179015365	0,450864171	0,504393656
0,033924792	0,002273392	0,102931857	0,001122555	0,038605305	0,004924644	0,008621101	0,349702508	0,17472393	0,086386766	0,351918287	0,187235155	0,591402278
0,028469756	1,73E-50	7,64E-27	0,922357768	0,079662246	0,214988545	0,013410056	0,70071077	0,650404102	0,365460406	0,744861035	0,154344691	0,084755266
0,221627188	2,77E-21	0,004073463	0,027187096	0,00026723	0,043860071	0,363651639	0,034891766	0,901135329	0,297139059	0,000542441	0,435083262	0,001632181
8,20E-07	5,75E-34	4,34E-05	0,020031608	0,605481894	0,052803594	0,189554331	0,002001188	0,765678438	0,547535843	0,05353652	0,524706	0,795638441
0,530219091	0,53744771	0,539351571	0,751897492	0,099268937	0,77481397	0,269467986	0,333999732	0,256733178	0,285148759	0,729938922	0,624862145	0,84218833
0,002744188	0,00104765	0,006855914	0,071154313	0,437655432	0,85839946	0,48635239	0,504782487	0,562046654	0,460580574	0,811605284	0,735653041	0,890658437
1,91E-06	6,24E-26	8,80E-10	0,020873765	0,003822932	0,485460413	0,690618293	0,013306793	0,523397662	0,749841657	0,530105429	0,373798745	0,039469111
0,145849011	1,00E-15	1,98E-06	0,973740172	0,980213893	0,081293909	0,822379055	0,175755498	0,352454881	0,691864882	0,151011346	0,432252313	0,74916286
0	2,26E-81	1,42E-42	0,003826956	0,062312207	0,122461087	0,241440517	0,641810846	0,205972493	0,226847163	0,436402278	0,270224733	0,0249999
1,41E-30	6,19E-13	4,09E-06	0,046196456	0,008564664	0,281747042	0,680120326	0,617495722	0,470723697	0,13864179	0,773589937	0,683650916	0,868220371
5,88E-07	5,58E-17	1,47E-07	0,880143189	0,774302978	0,0334148	0,283740574	0,515949947	0,00180567	0,356920172	0,50488894	0,006503669	0,700563718
2,39E-34	2,76E-62	7,41E-22	0,003940934	0,326294442	0,291544698	0,837343199	0,603411443	0,033945893	0,005728445	0,058252914	0,091319461	0,057245579
5,35E-06	1,91E-10	0,012656585	0,041319804	0,096982236	0,505279265	0,382728247	0,673018945	0,420715802	0,827204519	0,001595397	0,672062523	0,863150044
5,07E-22	2,55E-32	1,71E-137	0,00013518	0,310844186	0,000906724	0,465477905	0,981933549	0,027045939	0,136511572	0,919686355	0,10257168	0,506457014
2,86E-09	2,71E-40	1,56E-05	0,038557646	0,707691831	0,091532866	0,313307884	0,217130755	0,892731696	0,944908045	0,729938922	0,624862145	0,84218833
6,48E-05	4,88E-139	1,64E-54	1,55E-06	0,355127178	0,148270836	0,003069825	0,014767656	0,002469616	0,211644217	0,110273931	0,916907707	0,777007988
1,51E-142	2,84E-121	9,51E-101	2,64E-05	0,036301796	0,670142568	0,932532286	0,709791323	0,005165104	0,047303996	0,257034951	0,019693795	0,123844289
4,42E-38	3,87E-109	1,00E-165	5,34E-06	0,421682406	0,182181016	0,201725742	0,35794096	5,68E-05	0,077069917	0,596479662	0,453252667	0,331051739
1,59E-37	1,26E-111	1,49E-161	5,54E-06	0,451801367	0,210290223	0,212943592	0,373777372	7,16E-05	0,082744042	0,603875632	0,462377637	0,334049698
0,297703215	1,40E-05	0,675631498	5,14E-12	6,86E-21	0,179944547	0,2056489	2,18E-09	0,43269459	0,129030165	0,518795994	0,112166929	0,709821338
0,297703215	1,40E-05	0,675631498	5,14E-12	6,86E-21	0,179944547	0,2056489	2,18E-09	0,43269459	0,129030165	0,518795994	0,112166929	0,709821338
0,283959818	1,28E-12	1,60E-09	0,003021591	0,476945972	2,22E-05	0,002589793	0,172809956	0,000617587	0,115081327	0,399479527	0,197581184	0,389040281
0,085728756	1,47E-52	4,19E-38	0,023204769	0,932833448	0,404432696	0,002126866	0,845288331	0,065202712	0,046648925	0,664129696	0,064430851	0,358035248
0,680806042	0,000684954	0,049867313	0,144259673	0,50845934	0,06888167	0,530026748	0,418215104	0,110340863	0,835520589	0,522849245	0,365397632	0,712503278
0,10912122	3,25E-59	1,91E-44	0,00953462	0,795567929	0,293085611	0,00066545	0,847258528	0,009287906	0,087296778	0,739288175	0,107121384	0,24563507
0,020549732	1,96E-52	3,83E-28	0,973673207	0,095937281	0,174511029	0,041162057	0,668530569	0,713750241	0,341640878	0,758621034	0,615658845	0,088189144
0,020549732	1,96E-52	3,83E-28	0,973673207	0,095937281	0,174511029	0,041162057	0,668530569	0,713750241	0,341640878	0,758621034	0,615658845	0,088189144
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

0,94451833	0,441018765	0,929325453	0,453579692	0,513985193	0,299259054	0,68962742	0,701981565	0,483597125	0,672062523	0,89122585	0,846410612	0,937133914
0,508869833	0,06859268	0,105871296	0,287613697	0,354460779	0,14075164	0,001929153	0,587226864	0,915984723	0,548129463	0,846172323	0,783474833	0,910908978
0,810743713	0,089127735	0,187276628	0,157727054	0,279312863	0,085214719	0,005708973	0,525938032	0,8937347	0,482902941	0,820696845	0,748185402	0,895997338
0,907813822	1,45E-09	0,128748887	0,864265748	0,034428519	0,152349449	0,9536699	0,308114129	0,248277387	0,259498913	0,715730006	0,605969268	0,83364243
0,159909278	2,72E-14	0,009706127	0,049422436	0,008748588	0,052138313	0,22811966	0,009565373	0,620661855	0,669263027	2,14E-06	0,558943437	2,49E-05
0,323387529	1,01E-22	0,003064338	0,069601163	0,000199489	0,027754618	0,426141483	0,234593602	0,725622367	0,291762114	0,001572407	0,445777449	0,003864147
7,10E-08	2,90E-27	2,59E-11	0,002438352	0,003878918	0,194150312	0,111168986	0,025881348	0,380495448	0,590984191	0,347866393	0,183536577	0,014465417
0,033980102	1,19E-16	6,40E-07	0,337343053	0,821248865	0,148621877	0,722847549	0,241796893	0,514369625	0,597214462	0,181924327	0,410353121	0,737488281
2,12E-05	1,44E-33	1,45E-13	0,039179642	0,058917654	0,039563328	0,778134678	0,091894408	0,162849095	0,671341371	0,457806452	0,631407197	0,111092581
1,27E-07	2,51E-39	2,54E-05	0,000972068	0,831222125	0,134251056	0,232903667	0,000332375	0,931502156	0,684518672	0,029215444	0,562961287	0,813802857
0,010730601	9,10E-14	0,010959488	0,127247681	0,903821815	0,693281133	0,498946146	0,010248988	0,111171032	0,457891553	0,816912292	0,742964385	0,893776083
9,52E-09	2,33E-31	0,004343409	0,318851818	0,635248321	0,421887127	0,440566171	0,459935345	0,176003264	0,413633252	0,791726851	0,708376184	0,87894968
1,09E-09	3,54E-46	3,16E-05	0,011725822	0,850558584	0,154288095	0,251402527	0,034718441	0,872150406	0,702095568	0,388040169	0,578092758	0,820848102
1,15E-06	3,48E-16	1,16E-07	0,768367215	0,733862008	0,039399016	0,266672934	0,493878792	0,001385917	0,371138281	0,508819237	0,005861842	0,703188935
1,15E-06	3,48E-16	1,16E-07	0,768367215	0,733862008	0,039399016	0,266672934	0,493878792	0,001385917	0,371138281	0,508819237	0,005861842	0,703188935
0,001232438	6,56E-10	7,23E-05	0,74747962	0,441129412	0,380739477	0,425479902	0,953000546	0,404464626	0,011195846	0,600774658	0,4613248	0,762809668
1,27E-33	5,60E-52	3,16E-18	0,000593616	0,345576279	0,023878177	0,688987253	0,560534245	0,058530408	0,199939514	0,006406107	0,147899418	0,010645791
9,73E-37	6,32E-69	6,20E-24	0,000879483	0,195639541	0,126690964	0,945891793	0,569969272	0,028702087	0,010180333	0,029659007	0,085661662	0,03230672
0	7,02E-89	2,70E-45	0,004571275	0,024594216	0,096636854	0,446360651	0,550379511	0,198246039	0,128594015	0,479775591	0,316798393	0,031277786
0	7,02E-89	2,70E-45	0,004571275	0,024594216	0,096636854	0,446360651	0,550379511	0,198246039	0,128594015	0,479775591	0,316798393	0,031277786
7,02E-89	0	1,34E-116	3,31E-07	0,011209161	0,078724879	0,092203571	0,050786345	0,011016148	0,088457435	0,150402313	0,082579392	0,353743296
2,70E-45	1,34E-116	0	4,61E-07	0,130597764	0,491249522	0,100839166	0,971526358	0,025315112	0,034995942	0,606347624	0,121310952	0,335049019
0,004571275	3,31E-07	4,61E-07	0	9,08E-06	0,008881406	0,362645534	0,207517697	0,967565771	0,402747903	0,940391953	0,108342258	0,176842016
0,024594216	0,011209161	0,130597764	9,08E-06	0	0,641992221	0,178293401	0,208678843	0,372568606	0,096982236	0,062018521	0,513985193	0,000162386
0,096636854	0,078724879	0,491249522	0,008881406	0,641992221	0	0,495731316	0,374635826	0,482068665	0,141487461	0,463710642	0,299259054	0,672603737
0,446360651	0,092203571	0,100839166	0,362645534	0,178293401	0,495731316	0	0,588793203	0,104371501	0,382728247	0,777984905	0,68962742	0,870824626
0,550379511	0,050786345	0,971526358	0,207517697	0,208678843	0,374635826	0,588793203	0	0,069975433	0,0069975433	0,003230218	0,787047442	0,02103885
0,198246039	0,011016148	0,025315112	0,967565771	0,372568606	0,482068665	0,104371501	0,069975433	0	0,004667594	0,004667594	0,620919638	0,39570221
0,128594015	0,088457435	0,034995942	0,402747903	0,096982236	0,141487461	0,382728247	0,003230218	0,004667594	0	0,765047147	0,672062523	0,863150044
0,479775591	0,150402313	0,606347624	0,940391953	0,062018521	0,463710642	0,777984905	0,787047442	0,620919638	0,765047147	0	0,89122585	0,95593008
0,316798393	0,082579392	0,121310952	0,108342258	0,513985193	0,299259054	0,68962742	0,02103885	0,39570221	0,672062523	0,89122585	0	0,937133914
0,031277786	0,353743296	0,335049019	0,176842016	0,000162386	0,672603737	0,870824626	0,876185891	0,775475665	0,863150044	0,95593008	0,937133914	0
0,511257868	0,504584111	0,959244911	0,29516736	0,706919178	0,549872584	0,818023923	0,825514216	0,686522411	0,807316183	1,75E-232	0,911140082	0,963754351
0,121495319	0,062347013	0,101681291	0,001184315	0,120233149	0,158691804	0,58770476	0,141331671	0,341556496	0,56549899	0,85272074	0,000306433	0,914731422
0,232270414	0,000853449	0,000230163	0,439613436	0,151565302	0,242850536	0,357604158	0,751685678	0,356193864	0,909681425	0,752787513	0,655500524	0,855853792
0,704105902	0,368720989	0,282780706	0,663409613	0,137994088	0,397226476	0,744625543	0,754962986	0,567754243	0,729887783	0,911186087	0,874463823	0,948705516
0,642491125	0,917588044	0,335049019	0,176842016	0,79044889	0,672603737	0,870824626	0,876185891	0,775475665	0,863150044	0,95593008	0,937133914	0,974379292
0,111634258	4,03E-07	0,522604982	0,209226622	0,001594071	0,099007529	0,525783158	0,004917495	0,898119085	0,379316102	0,828017426	0,758300902	0,900289383
0,511257868	0,722782167	0,14246092	0,665913346	0,706919178	0,549872584	0,818023923	0,825514216	0,686522411	0,807316183	0,937199026	0,911140082	0,963754351
0,161789977	0,003388489	0,00175517	0,568990557	0,423353945	0,733392232	0,624212545	0,083787441	0,390139912	0,603565917	0,866780174	0,812187538	0,922925109
0,090910176	0,053264573	0,352736101	0,097158804	0,00045093	0,397226476	0,744625543	0,754962986	0,185108491	0,729887783	0,911186087	0,874463823	0,948705516
1,22E-15	3,58E-07	0,00027344	0,055073342	0,151565302	0,059627133	0,817909566	0,751685678	0,646158173	0,909681425	0,752787513	0,655500524	0,855853792
0,001257555	0,085832829	0,001385265	0,00487266	0,226552474	0,000256228	0,623336458	0,756924453	0,424031066	0,955240621	0,54156092	0,08069217	0,72479401
0,036127651	0,02288189	0,026081503	0,080178618	0,193685165	0,001606462	0,400483334	0,964169162	0,689078907	0,241991698	0,016416041	0,59248175	0,827480889
0,199063945	0,169911409	0,004805911	0,011031318	0,455226652	0,000672419	0,224648564	0,544337822	2,15E-08	0,434946232	0,871792019	0,258749928	0,522004398
0,150545678	0,001594252	0,006705835	0,537372779	0,242164189	0,569215617	0,474251445	0,492949143	0,705270545	0,448142087	0,806443903	0,728553804	0,88762309

enteropathy_	pneumonitis_	ILD_	alv_hemorrhage	TTP_	Splenomegaly_	epi_scleritis_	uveitis_	myocarditis_	aRNP_	aSSA_	aSSB_	Raynaud_
0,237675177	0,749789595	0,004082567	0,51310592	0,404065708	0,657595676	0,797528635	0,011828419	0,716459989	0,020029952	0,669447478	0,771348184	0,000498713
0,728714343	0,413739437	0,165414211	0,623409544	0,806363723	0,867437852	0,728714343	0,460204868	0,623409544	0,54948967	0,681797388	0,737830966	0,126238249
0,956914944	0,045908801	0,011573295	0,053807165	0,299071886	0,527824906	0,956914944	0,025696063	0,053807165	0,486204097	0,751923067	0,795562073	5,59E-05
0,446142486	0,284674004	0,193897855	0,280715269	0,59030172	0,392166056	0,446142486	6,29E-05	0,280715269	0,67056987	0,136366069	0,684459161	0,924899668
0,418752125	0,024026713	0,028938277	0,993355283	0,084755266	0,893824285	0,412011174	0,034950858	0,252252603	0,734951182	0,627610181	0,460287478	0,10312382
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0,448142087
0,806443903
0,728553804
0,88762309
0,841519398
0,637537273
0,606066915
0,777124451
0,88762309
0,581398842
0,841519398
0,670313386
0,777124451
0,606066915
0,417460611
0,337496269
0,197360428
0

SUPPLEMENTARY TABLE S4

	ACR97_malar_	ACR97_discoi	ACR97_photose	ACR97_ulcers_	ACR97_synoviti	ACR97_serosit	ACR97_renal_	ACR97_neuro_	ACR97_hematol	ACR97_immuno	ACR97_ANA_	ACR97_items_	ACR97_
ACR97_malar_	1	0,012780171	0,413959437	0,163067749	0,165373082	-0,004032611	-0,020828957	-0,015697642	0,01444637	0,02905903	0,213788696	0,573796946	0,530759358
ACR97_discoi	0,012780171	1	0,076323999	0,028053376	-0,032374901	-0,000796855	0,003465279	0,035164428	0,007309114	-0,013811606	0,008296286	0,168756709	0,071216223
ACR97_photosens_	0,413959437	0,076323999	1	0,203608225	0,125350157	-0,027182439	-0,058788754	0,012972596	-0,036451288	-0,026662136	0,182919658	0,541363957	0,500287889
ACR97_ulcers_	0,163067749	0,028053376	0,203608225	1	0,050640077	-0,034423679	-0,009713788	-0,015522284	0,030712609	-0,055808916	0,031184369	0,373387386	0,301129627
ACR97_synovitis_	0,165373082	-0,032374901	0,125350157	0,050640077	1	0,019845982	0,017534493	-0,139796	-0,013448799	0,03630495	0,124869612	0,393268082	0,332245666
ACR97_serosit	-0,004032611	-0,000796855	-0,027182439	-0,034423679	0,019845982	1	0,06825761	-0,042497135	0,086306038	0,055015752	0,017660373	0,209680065	0,144958431
ACR97_renal_	-0,020828957	0,003465279	-0,058788754	-0,000713788	0,017534493	0,06825761	1	-0,005435823	0,156081791	0,152871597	0,048841078	0,239019537	0,171587554
ACR97_neuro_	-0,015697642	0,035164428	0,012972596	-0,015522284	-0,139796	-0,042497135	-0,005435823	1	0,022494488	0,027943398	0,159737996	0,303451056	0,341766703
ACR97_hematol_	0,01444637	0,007309114	-0,036451288	0,030712609	-0,013448799	0,086306038	0,156081791	0,022494488	1	0,159737996	0,174562223	0,381886508	0,27434391
ACR97_immunol_	0,02905903	-0,013811606	-0,026662136	-0,055808916	0,03630495	0,055015752	0,152871597	0,027943398	0,159737996	1	0,303451056	0,41914976	0,341766703
ACR97_ANA_	0,213788696	0,008296286	0,182919658	0,031184369	0,124869612	0,017660373	0,048841078	0,037688918	0,174562223	0,303451056	1	0,576683951	0,456231988
ACR97_items_	0,573796946	0,168756709	0,541363957	0,373387386	0,393268082	0,209680065	0,239019537	0,058194383	0,381886508	0,41914976	0,576683951	1	0,824210611
ACR97_	0,530759358	0,071216223	0,500287889	0,301129627	0,332245666	0,144958431	0,171587554	0,057377601	0,27434391	0,341766703	0,456231988	0,824210611	1
SLICC_ACLE_	0,758789861	0,054015638	0,593459389	0,184689094	0,166884124	0,003621065	-0,020484688	0,011631053	0,008741673	0,062007743	0,264450447	0,592861333	0,529076811
SLICC_CCLE_	0,021692471	0,885941317	0,094911899	0,014192066	-0,024272102	-0,004688842	-0,012193661	0,024130854	-0,004351004	0,008994682	0,036109161	0,166609641	0,081114532
SLICC_Alopecia_	0,314224676	0,009934997	0,372084284	0,196542097	0,16620909	0,004159378	-0,032354622	-0,021197827	-0,010497465	-0,046121288	0,138810086	0,317895866	0,246351477
SLICC_Ulcers_	0,160369252	0,028706492	0,201369206	0,997040198	0,049286758	-0,033692702	-4,03E-05	-0,01521686	0,032092607	-0,060064604	0,029589635	0,369930866	0,299102622
SLICC_Synovitis_	0,165373082	-0,032374901	0,125350157	0,050640077	1	0,019845982	0,017534493	-0,139796	-0,013448799	0,03630495	0,124869612	0,393268082	0,332245666
SLICC_Serosit	-0,004032611	-0,000796855	-0,027182439	-0,034423679	0,019845982	1	0,06825761	-0,042497135	0,086306038	0,055015752	0,017660373	0,209680065	0,144958431
SLICC_Renal_	-0,035019875	-0,008490157	-0,070886787	0,002814354	0,013315076	0,079406766	0,934267606	0,002271214	0,156346826	0,165164196	0,061717322	0,228306857	0,170286511
SLICC_CNS_	-0,024049567	0,020943691	0,002224561	-0,01707535	-0,107728292	-0,063364582	-0,033077102	0,670676487	-0,003692599	0,02868309	0,015658043	0,011997385	0,00882005
SLICC_AIHA_	-0,03718045	-0,033748482	-0,040635451	-0,037514963	-0,043449937	0,088569481	-0,037495584	-0,018384507	0,256109122	0,092232023	0,074883679	0,069141375	0,04828008
SLICC_Leucopenia_	0,080136369	0,005668224	-0,015597968	0,058982611	0,027731333	0,0728084	0,126357254	0,035088281	0,683838736	0,153622957	0,152080525	0,332018532	0,231748045
SLICC_Thrombocytopenia_	-0,050341771	-0,017030765	-0,044700323	-0,02765224	-0,043719875	0,082895028	0,137017809	0,011402538	0,587141761	0,117383128	0,097051723	0,193007795	0,231748045
SLICC_aDNA_	0,033092841	0,010325555	-0,05785685	-0,054585019	0,073718381	0,030840695	0,151556773	-0,017413466	0,13930062	0,750937008	0,296756914	0,343361798	0,282358441
SLICC_aSm_	0,017147778	-0,013131186	-0,00643725	0,017598844	0,008047657	-0,008580429	0,055438469	0,02645606	0,155913489	0,279336108	0,09653646	0,157131955	0,130661614
SLICC_aPL_	-0,027169816	-0,014569167	-0,006861487	-0,015644031	-0,017904669	0,058834061	0,077146071	0,018925074	0,081289895	0,605354546	0,115611045	0,215918813	0,163792856
SLICC_CompL_	0,039438323	0,011696656	-0,045072369	0,004531399	0,005073938	-0,01116986	0,152834026	0,044182408	0,186091105	0,428669545	0,213867219	0,247213337	0,169560105
SLICC_Coombs_	-0,068880104	0,064186629	-0,055059989	0,025091993	-0,013475661	0,051797853	0,122970676	0,023874273	0,202894195	0,177980841	0,061227465	0,119750869	0,052319493
SLICC_ANA_	0,213788696	0,008296286	0,182919658	0,031184369	0,124869612	0,017660373	0,048841078	0,037688918	0,174562223	0,303451056	1	0,576683951	0,456231988
SLICC_Kidney_bx_	-0,00215757	-0,002329745	-0,083999405	0,008717346	0,028743762	0,029863903	0,709843382	0,014392199	0,112564286	0,20032614	0,085739536	0,203804572	0,159687116
SLICC_clinical_criteria_	0,480490089	0,181910764	0,419870514	0,449261218	0,42562806	0,258512447	0,219695079	0,047344338	0,391654473	0,123598513	0,283879282	0,812372077	0,642052111
SLICC_immun_criteria_	0,09670233	0,014368593	0,028025859	-0,002009116	0,07093198	0,037201079	0,174641774	0,03869265	0,261483198	0,773476105	0,641000973	0,542878544	0,416063773
SLICC_criteria_fulfil_	0,316685157	0,060089826	0,24592074	0,232222805	0,254021781	0,094799897	0,159247469	0,019866134	0,284676945	0,45117087	0,598501184	0,702083565	0,662354619
SLICC_classified_criteria_	0,319969014	0,058581553	0,244137987	0,233875127	0,252906825	0,092847786	0,182010431	0,019042032	0,281403445	0,447574609	0,593776077	0,702422874	0,66052494
EULAR_fever_	-0,060721993	-0,064068127	-0,112090797	0,003423817	-0,052978116	0,220300637	0,060216981	-0,025723499	0,049769472	0,015740823	-0,074147507	-0,032156533	-0,018715563
Fever_score	-0,060721993	-0,064068127	-0,112090797	0,003423817	-0,052978116	0,220300637	0,060216981	-0,025723499	0,049769472	0,015740823	-0,074147507	-0,032156533	-0,018715563
EULAR_cut_A_	0,311210921	0,041111236	0,385865146	0,610137585	0,163445747	0,007710309	-0,029252446	-0,019799395	0,012573882	-0,056214049	0,142965514	0,434541154	0,338631527
EULAR_cut_B_	0,903634774	0,016101703	0,462125683	0,184082459	0,166069986	-0,012766787	-0,013876559	-0,028231569	0,017733536	0,03807509	0,229507838	0,571791033	0,513308625
EULAR_cut_C_	0,105684516	0,665202339	0,185884881	0,029714594	-0,00578977	0,025820199	-0,012789457	0,047579568	0,007798864	-0,02378971	0,017612006	0,193220336	0,11457475
Cutaneous_score	0,848275445	0,159339683	0,5264472	0,274461237	0,169056671	-0,000466515	-0,026718909	0,004812825	0,016806089	0,035577773	0,256269035	0,62763718	0,538188574
EULAR_synovitis_	0,172385902	-0,029881243	0,119584934	0,04980224	0,989162633	0,014559802	0,020018795	-0,137784068	-0,013968127	0,036349655	0,117912916	0,388472438	0,32557183
Synovitis_score	0,172385902	-0,029881243	0,119584934	0,04980224	0,989162633	0,014559802	0,020018795	-0,137784068	-0,013968127	0,036349655	0,117912916	0,388472438	0,32557183
EULAR_neuro_A_	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
EULAR_neuro_B_	-0,012418357	0,037493644	0,029346616	-0,011022059	-0,045135021	-0,025102452	0,030342658	0,590685752	-0,010844678	-0,016969412	0,023940814	0,042316648	0,0540115584

EULAR_neuro_C_	-0,017617177	0,012860488	-0,014397831	-0,015636332	-0,150025353	-0,03561134	0,006263206	0,83797038	0,029383379	0,060907234	0,033963394	0,043131711	0,039296751
Neuro_score	-0,017035965	0,028216716	0,0032533	-0,016178703	-0,149148	-0,041603349	-0,00127716	0,978968319	0,025959334	0,041371657	0,037786452	0,054864425	0,052887019
EULAR_serositis_A_	0,001666887	-0,007248346	-0,031241177	-0,031859415	0,003336671	0,060943404	0,003336671	0,660943404	0,059254204	0,0603444953	-0,027059204	0,110106021	0,09085471
EULAR_serositis_B_	0,00597509	0,000959969	-0,009231803	0,003304824	-0,020110212	0,748795691	0,079505542	0,748795691	-0,031821672	0,080794469	0,056541797	0,02918356	0,178347905
Serositis_score	-0,001950898	0,000758998	-0,027073209	-0,033113185	0,026746251	0,976882525	0,06612463	0,976882525	-0,041514709	0,092595163	0,049593171	0,006240861	0,205374158
EULAR_hem_A_	0,089215759	-0,011318956	0,006798583	0,06859285	7,00E-06	0,022765357	0,108957923	0,022765357	0,057439731	0,620567773	0,158911195	0,176271462	0,316848691
EULAR_hem_B_	-0,050453146	-0,023112627	-0,048837482	-0,033177011	-0,057746754	0,094798023	0,124445032	0,094798023	0,07318193	0,616218554	0,127899098	0,111636029	0,199800625
Hem_score	0,037109537	-0,026868156	-0,006748064	0,024130363	-0,045270112	0,069662531	0,121520581	0,069662531	0,042607109	0,826577243	0,173687148	0,184530767	0,339031585
EULAR_renal_A_	-0,027688038	-0,017871386	-0,069618207	0,005825263	0,008966435	0,069062335	0,828393762	0,828393762	0,003705534	0,139451394	0,18607424	0,066477003	0,214248083
EULAR_renal_B_	0,000280315	0,035164428	-0,034225572	0,022127511	0,041303364	0,011937398	0,459327054	0,459327054	-0,017857143	0,097917183	0,099528733	0,054738667	0,148358213
EULAR_renal_C_	-0,014591092	-0,037389064	-0,063507354	-0,015752638	-0,00734657	0,047481664	0,55924514	0,55924514	0,032403185	0,067692727	0,177542451	0,041219791	0,137478457
Renal_score	-0,020451273	-0,016802984	-0,074422568	-0,003881861	0,012574358	0,060005021	0,804995487	0,804995487	0,012443548	0,128541354	0,205003401	0,067925439	0,211802357
EULAR_aPL_	-0,022181167	-0,013148867	-0,000941245	-0,019835635	-0,021625117	0,050478327	0,067149256	0,067149256	0,019884262	0,077745595	0,599104412	0,119011478	0,212838233
aPL_score	-0,022181167	-0,013148867	-0,000941245	-0,019835635	-0,021625117	0,050478327	0,067149256	0,067149256	0,019884262	0,077745595	0,599104412	0,119011478	0,212838233
EULAR_hypocompl_A_	0,111644443	-0,009628866	0,060048421	0,069445432	0,027675626	-0,018586126	0,043474353	0,043474353	-0,04035915	0,074374353	0,100606819	0,0088647311	0,133776833
EULAR_hypocompl_B_	-0,036953793	0,035159964	-0,109668092	-0,051083611	-0,034615075	0,012114161	0,192551999	0,192551999	0,086467139	0,197561957	0,44484736	0,188044484	0,200002611
Hypocompl_score	0,025769783	0,026941694	-0,06391798	-0,006701785	0,002157237	0,001338007	0,169567841	0,169567841	0,056086642	0,203495885	0,453757771	0,221216857	0,254768545
EULAR_spec_autoAbs_	0,04586315	0,002770639	-0,052523056	-0,062712655	0,070380647	0,039298687	0,150187732	0,150187732	-0,000360921	0,152133754	0,781504195	0,302978276	0,360467873
Autoabs_score	0,04586315	0,002770639	-0,052523056	-0,062712655	0,070380647	0,039298687	0,150187732	0,150187732	-0,000360921	0,152133754	0,781504195	0,302978276	0,360467873
EULAR_ACR_score_	0,423844741	0,044915907	0,189148116	0,10116008	0,4541911	0,297711884	0,356574083	0,356574083	0,048706509	0,343047789	0,560556188	0,367327006	0,78131811
EULAR_ACR_classified_	0,377041465	0,03130103	0,217365709	0,054718763	0,335014005	0,092197703	0,124474388	0,124474388	0,034498936	0,220863834	0,413464294	0,689266238	0,678436395
fatigue	0,07947975	-0,004369857	0,052041009	0,107674002	-0,00313504	0,070959682	0,053452876	0,053452876	0,049025348	0,063092376	0,066058202	0,122311309	0,156896121
lymphaden_	-0,002423098	0,006597529	-0,039736514	0,065692208	-0,056331202	0,116848762	0,025792865	0,025792865	-0,035536257	0,06645791	0,059503521	0,032590195	0,053097059
sicca_	0,021181317	-0,029138562	0,105404125	0,095960932	0,03986902	-0,064760417	0,069896796	0,069896796	-0,056510447	-0,054649782	-0,081088882	0,106423268	0,036540792
demographism_	0,102301541	-0,039920158	0,103931344	0,083801181	0,079411262	-0,029214422	-0,044352504	-0,044352504	0,077417651	-0,056189758	0,021824847	0,023473437	0,090518239
skin_vascul_	0,021402644	0,020349378	-0,05510085	0,029639449	0,012362946	0,06778005	0,091115001	0,091115001	-0,020836479	0,062598015	-0,015514318	0,000728398	0,039254648
livedo_	0,079609567	0,014474655	0,10090417	0,04285781	-0,014576951	0,003995897	-0,016143955	-0,016143955	-0,008360082	-0,003261938	0,079585896	0,071024834	0,100698135
urticaria_	0,0563447	0,010935907	0,068242828	0,054599447	0,029104499	-0,033526617	-0,022729652	-0,022729652	-0,023051022	-0,003995661	0,037721053	0,047864985	0,071401455
ascites_	-0,008767459	-0,013670371	0,020718944	-0,030024815	-0,010467314	0,110915163	0,058032511	0,058032511	-0,007446943	0,01462309	0,00916544	-0,003243266	0,024268735
hepatitis_	0,067804231	-0,019362915	0,00301618	-0,042527589	0,045791871	-0,025102452	-0,021512784	-0,021512784	-0,01054796	-0,010844678	0,042933541	0,052475438	0,034374593
mes_vasculit_	-0,026834024	-0,007884435	-0,030936508	-0,017316918	-0,055403399	0,101066832	-0,008759846	-0,008759846	-0,004295051	0,059833082	0,054070274	0,021367608	0,013997079
enteropathy_	-0,037968658	-0,011156039	0,001737787	-0,02450248	-0,026004764	0,064270534	-0,012394696	-0,012394696	-0,006077259	-0,024429957	-0,027033701	-0,01908711	-0,035105161
pneumonitis_	-0,010258055	-0,026285838	-0,06414492	-0,034403681	-0,072493877	0,033381294	0,047590826	0,047590826	-0,014319227	-0,057561822	-0,019340195	-0,055537584	-0,076833836
ILD_	-0,092175155	-0,044595155	-0,081082381	-0,041769906	-0,07017473	0,023406397	0,019799543	0,019799543	-0,024293239	-0,041388164	-0,04130785	-0,069938947	-0,122627917
alv_hemorrhage_	-0,021034626	-0,015793362	-0,061969117	-0,034687629	0,00026788	-0,020474816	0,172784614	0,172784614	0,11399563	0,081242782	0,035018744	-0,061932607	0,008603824
TTP_	-0,026834024	-0,007884435	0,03339284	-0,017316918	-0,055403399	0,101066832	-0,008759846	-0,008759846	-0,004295051	0,059833082	-0,019105837	0,021367608	0,013997079
Splenomegaly_	0,014256442	0,005368936	-0,020305353	-0,027519225	-0,00429309	0,16273499	0,163528815	0,163528815	-0,016756273	0,1532173	0,096751525	-0,007297631	0,105073121
epi_scleritis_	0,008251982	-0,011156039	0,001737787	-0,02450248	0,026383212	-0,014462901	-0,012394696	-0,012394696	-0,006077259	-0,024429957	-0,027033701	-0,068408201	-0,035105161
uveitis_	-0,080836801	-0,023751655	-0,07166315	0,128183476	-0,067758092	-0,0307921	0,026388808	0,026388808	-0,012938729	-0,026205922	-0,057555839	-0,09897422	-0,094224659
myocarditis_	0,011682152	-0,015793362	-0,061969117	-0,034687629	-0,036814381	0,14671701	0,045896936	0,045896936	-0,008603444	0,081242782	0,035018744	0,007890193	0,028037638
aRNP_	0,074707022	-0,01925046	-0,022396373	-0,013681746	0,010889423	-0,037508908	0,042914912	0,042914912	0,065043187	0,113349276	0,185664869	0,095417831	0,121652418
aSSA_	0,013731288	0,013187922	0,010167606	-0,047882733	-0,015602632	-0,066440964	-0,018149017	-0,018149017	0,028160505	0,142472903	0,067940876	0,177088829	0,083857522
aSSB_	0,00934766	0,010766569	0,008333938	0,013071307	0,023747283	-0,035034243	0,018711565	0,018711565	-0,029144825	0,120644042	0,062202609	0,101988205	0,086002348
Raynaud_	0,11163453	-0,049155703	0,129067229	0,003032094	0,052391414	-0,046419974	-0,076106195	-0,076106195	-0,033699701	-0,038975485	0,027784401	0,199250146	0,110307548
Myositis_	-0,0726811	-0,034691513	-0,046736698	-0,04054383	-0,003698655	-0,04497474	-0,038543321	-0,038543321	-0,018898224	-0,004551133	-0,05017359	-0,051282259	-0,095684751
SLE	0,474297902	0,106836289	0,405077416	0,206779942	0,216853619	0,082206	0,10383448	0,10383448	0,055728341	0,253601818	0,343173121	0,569540562	0,734918883

SLICC_ACLE_	SLICC_CCLE_	SLICC_Alopecia	SLICC_Ulcers_	SLICC_Synoviti	SLICC_Serositis	SLICC_Renal_	SLICC_CNS_	SLICC_AIHA_	SLICC_Leucopen	SLICC_Thrombo	SLICC_aDNA_	SLICC_aSm_	SLICC_aPL_
0,758789861	0,021692471	0,314224676	0,160369252	0,165373082	-0,004032611	-0,035019875	-0,024049567	-0,03718045	0,080136369	-0,050341771	0,033092841	0,017147778	-0,027169816
0,054015638	0,885941317	0,009934997	0,028706492	-0,032374901	-0,000796855	-0,008490157	0,020943691	-0,033748482	0,005668224	-0,017030765	0,010325555	-0,013131186	-0,014569167
0,593459389	0,094911899	0,372084284	0,201369206	0,125350157	-0,027182439	-0,070886787	0,002224561	-0,040635451	0,015597968	-0,044700323	-0,057856885	-0,00643725	-0,006861487
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0,166884124	-0,024272102	0,16620909	0,049286758	1	0,019845982	0,013315076	-0,107728292	-0,043449937	0,027731333	-0,043719875	0,073718381	0,008047657	-0,017904669
0,003621065	-0,004688842	0,004159378	-0,033692702	0,019845982	1	0,079406766	-0,063364582	0,088569481	0,0728084	0,082895028	0,030840695	-0,008580429	0,058834061
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0,067709412	1	0,032222503	0,0149007	-0,024272102	-0,004688842	-0,022200223	0,007649775	-0,03809336	-0,001770189	-0,033299626	0,027336363	0,003690406	0,00118604
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0,166884124	-0,024272102	0,16620909	0,049286758	1	0,019845982	0,013315076	-0,107728292	-0,043449937	0,027731333	-0,043719875	0,073718381	0,008047657	-0,017904669
0,003621065	-0,004688842	0,004159378	-0,033692702	0,019845982	1	0,079406766	-0,063364582	0,088569481	0,0728084	0,082895028	0,030840695	-0,008580429	0,058834061
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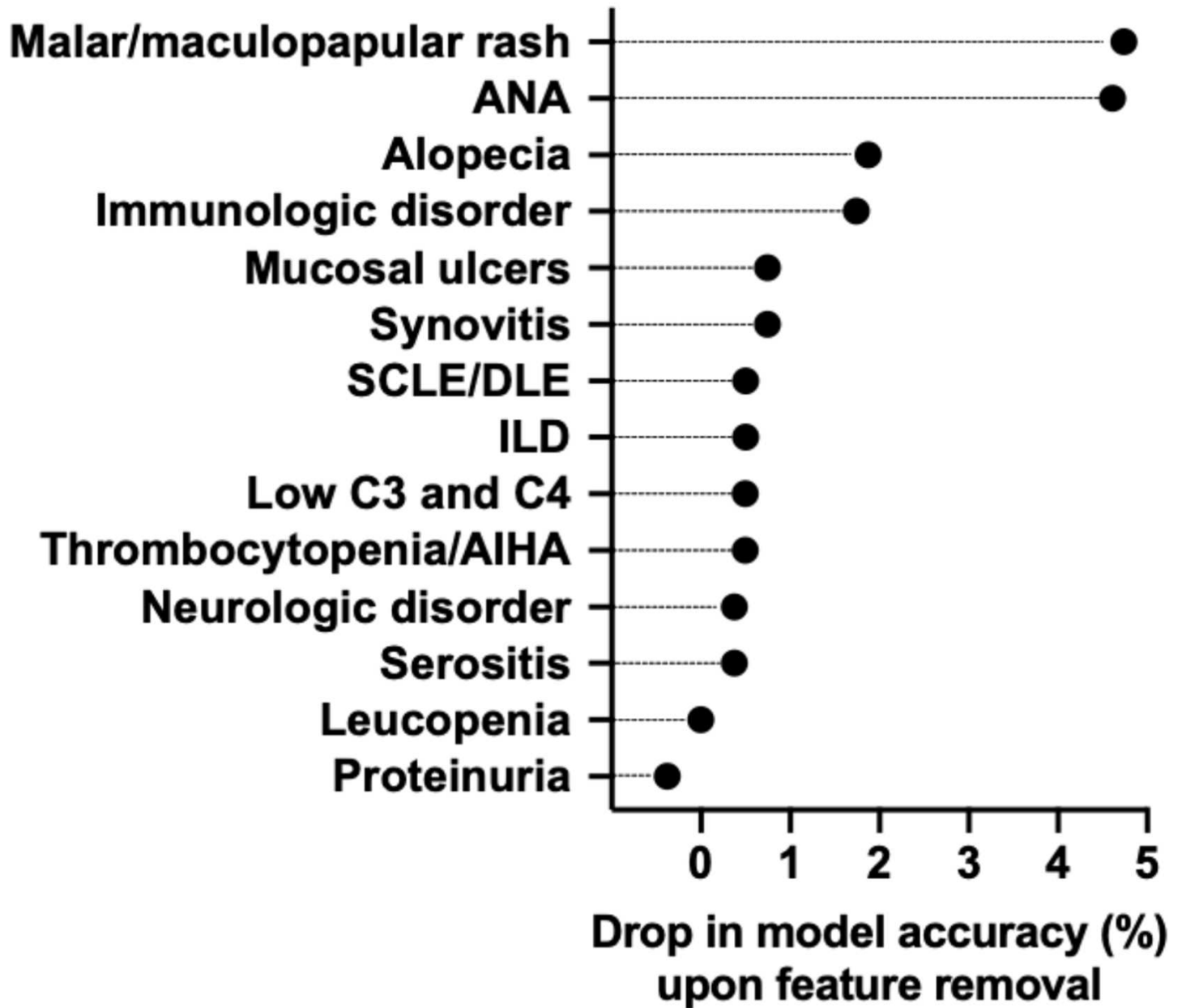
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0,057196425	-0,038788135	0,109869242	0,090264006	0,03986902	-0,064760417	-0,062230126	-0,009202017	0,005738778	-0,022434582	-0,056028857	0,059056079	-0,034613363	-0,06833944
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-0,02086319	0,009548867	0,042607618	0,030073899	0,012362946	0,06778005	0,099150187	-0,031067854	-0,02145183	0,079499672	0,043530391	-0,014961839	0,016062824	0,020892882
0,10382433	0,042599902	0,105600511	0,043634468	-0,014576951	0,003995897	-0,009586334	-0,036468982	0,018648446	0,020523596	0,029902623	0,040664273	-0,023198385	0,100120967
0,058677275	0,000148331	0,031478885	0,055115726	0,029104499	-0,033526617	-0,019344734	-0,034369808	-0,023731774	0,010255847	-0,012747748	0,038858762	0,047606804	-0,029626543
-0,023674983	0,056801523	0,043204456	-0,029935948	-0,010467314	0,110915163	0,062039104	-0,01110363	-0,007666869	0,020193298	0,046164942	0,025030439	-0,009253433	-0,021446471
0,045720191	-0,021855753	-0,024248908	-0,042401716	0,045791871	-0,025102452	-0,020459003	-0,015727344	-0,010859466	0,028602084	-0,025257438	0,035453481	-0,013106698	0,08736453
-0,035168997	-0,0088995	-0,021471407	-0,017265663	-0,055403399	0,101066832	-0,008330754	-0,006404058	-0,004421894	0,06616594	-0,010284641	0,072003741	-0,00533695	-0,012369328
-0,049762183	0,075827544	0,018848321	-0,024429957	0,064270534	-0,011787556	-0,009061387	-0,026062735	-0,022091723	-0,014552197	-0,020300607	-0,007551489	-0,017501914	
-0,039002439	-0,029669954	-0,071583311	-0,034194664	-0,072493877	0,033381294	0,052443259	-0,021350423	-0,014742108	-0,052052479	-0,034287862	-0,047832254	-0,017792805	0,016885078
-0,104709761	-0,050336466	-0,057964201	-0,041388164	-0,07017473	0,023406397	0,025316496	-0,036221992	-0,025010676	-0,073388477	0,002439427	-0,033884168	-0,030186326	-0,017476999
-0,038125568	-0,017826646	-0,043009514	-0,034584961	0,00026788	-0,020474816	0,115854234	0,071160778	-0,008857524	0,09158437	0,034850415	0,014503442	-0,010690479	0,023240901
0,029374106	-0,0088995	-0,021471407	-0,017265663	-0,055403399	0,101066832	-0,008330754	-0,006404058	0,233623393	-0,015613136	0,100446661	-0,01434728	-0,00533695	-0,012369328
0,03066318	-0,002214004	-0,011374295	-0,027253807	-0,00429309	0,16273499	0,105174571	-0,024984137	0,044661247	0,13051523	0,132674872	0,011403198	0,134375743	0,126316042
-0,004099725	-0,0125923	0,068077495	-0,024429957	0,026383212	-0,014462901	-0,011787556	-0,009061387	-0,006256735	-0,022091723	-0,014552197	-0,020300607	-0,007551489	-0,017501914
-0,084341868	-0,026809513	-0,041390749	0,128632726	-0,067758092	-0,0307921	-0,025096181	-0,019292057	-0,013320841	-0,047034169	-0,030982214	-0,043220809	-0,016077424	-0,03726228
-0,005803892	-0,017826646	-0,043009514	-0,034584961	-0,036814381	0,14671701	0,049583424	-0,012828009	0,110349985	0,09158437	0,090302059	0,014503442	0,088916004	-0,02477708
0,048380868	-0,02753327	0,030908126	-0,013254084	0,010889423	-0,037508908	0,025316496	0,024979595	-0,025010676	0,15042636	0,002439427	0,170932947	0,586760753	-0,017476999
0,011218119	0,017679289	0,014139526	-0,047088847	-0,015602632	-0,066440964	-0,023532747	-0,018653546	0,024688629	0,122080213	0,000702409	0,090425379	0,104512527	-0,037356462
0,030108031	0,016708455	0,026003266	0,01363258	0,023747283	-0,035034243	0,004696776	-0,043455863	-0,030005541	0,083233747	-0,018557329	0,049131523	0,147834963	-0,039571187
0,111049119	-0,036048562	0,083541283	-0,000826753	-0,052391414	-0,046419974	-0,063163495	-0,020957797	0,012815245	0,000930632	-0,05629267	0,02503482	0,034213567	0,051663063
-0,035168997	-0,0391578	-0,078359866	-0,040260026	-0,003698655	-0,04497474	-0,036655318	-0,028177853	-0,019456333	0,00705545	-0,045252421	-0,043130954	-0,023482581	-0,032219625
0,528498337	0,125163081	0,313240755	0,205456283	0,216853619	0,082206	0,109712023	0,075562865	0,092350874	0,212594031	0,2071110744	0,293650241	0,111461747	0,191801044

SLICC_Comp_	SLICC_Coombs	SLICC_ANA_	SLICC_Kidney_	SLICC_clinical_	SLICC_immun_	SLICC_criteria_	SLICC_classif_	EULAR_fever_	Fever_score	EULAR_cut_A_	EULAR_cut_B_	EULAR_cut_C_	Cutaneous_sci
0,039438323	-0,068880104	0,213788696	-0,00215757	0,480490089	0,09670233	0,316685157	0,319969014	-0,060721993	-0,060721993	0,311210921	0,903634774	0,105684516	0,848275445
0,011696656	0,064186629	0,008296286	-0,002329745	0,181910764	0,014368593	0,060089826	0,058581553	-0,064068127	-0,064068127	0,041111236	0,016101703	0,665202339	0,159339683
-0,045072369	-0,055059989	0,182919658	-0,083999405	0,419870514	0,028025859	0,24592074	0,244137987	-0,112090797	-0,112090797	0,385865146	0,462125683	0,185884881	0,5264472
0,004531399	0,025091993	0,031184369	0,008717346	0,449261218	-0,002009116	0,232222805	0,233875127	0,003423817	0,003423817	0,610137585	0,184082459	0,029714594	0,274461237
0,005073938	-0,013475661	0,124869612	0,028743762	0,42562806	0,07093198	0,254021781	0,252906825	-0,052978116	-0,052978116	0,163445747	0,166069986	-0,00578977	0,169056671
-0,01116986	0,051797853	0,017660373	0,029863903	0,258512447	0,037201079	0,094799897	0,092847786	0,220300637	0,220300637	0,007710309	-0,012766787	0,025820199	-0,000466515
0,152834026	0,122970676	0,048841078	0,709843382	0,219695079	0,174641774	0,159247469	0,182010431	0,060216981	0,060216981	-0,029252446	-0,013876559	-0,012789457	-0,026718909
0,044182408	0,023874273	0,037688918	0,014392199	0,047344338	0,03869265	0,019866134	0,019042032	-0,025723499	-0,025723499	-0,019799395	-0,028231569	0,047579568	0,004812825
0,186091105	0,202894195	0,174562223	0,112564286	0,391654473	0,261483198	0,284676945	0,281403445	0,049769472	0,049769472	0,012573882	0,017735386	0,007798864	0,016806089
0,428669545	0,177980841	0,303451056	0,20032614	0,123598513	0,773476105	0,45117087	0,447574609	0,015740823	0,015740823	-0,056214049	0,03807509	-0,02378971	0,035577773
0,213867219	0,061227465	1	0,085739536	0,283879282	0,641000973	0,598501184	0,593776077	-0,074147507	-0,074147507	0,142965514	0,229507838	0,017612006	0,256269035
0,247213337	0,119750869	0,576683951	0,203804572	0,812372077	0,542878544	0,702083565	0,702422874	-0,032156533	-0,032156533	0,434541154	0,571791033	0,193220336	0,627673718
0,169560105	0,052319493	0,456231988	0,159687116	0,642052111	0,416063773	0,662354619	0,66052494	-0,018715563	-0,018715563	0,338631527	0,513308625	0,11457475	0,538188574
0,043119868	-0,015550244	0,264450447	-0,012554732	0,579563356	0,145164374	0,379984828	0,381572793	-0,065253147	-0,065253147	0,339269072	0,83629516	0,20934349	0,846050161
0,019931793	0,048059211	0,036109161	-0,013289863	0,202852031	0,039014163	0,084613543	0,082914312	-0,054021827	-0,054021827	0,045371254	0,019199727	0,639588095	0,151048535
-0,031445283	0,05815404	0,138810086	-0,039836151	0,561539419	0,033484659	0,14222886	0,346097602	-0,077957613	-0,077957613	0,775105043	0,322844555	0,10465829	0,411536489
-0,000167415	0,025560032	0,029589635	0,009224832	0,448908155	-0,005822395	0,230195006	0,231864905	0,004351216	0,004351216	0,608262812	0,181691566	0,030676057	0,272385684
0,005073938	-0,013475661	0,124869612	0,028743762	0,42562806	0,07093198	0,254021781	0,252906825	-0,052978116	-0,052978116	0,163445747	0,166069986	-0,00578977	0,169056671
-0,01116986	0,051797853	0,017660373	0,029863903	0,258512447	0,037201079	0,094799897	0,092847786	0,220300637	0,220300637	0,007710309	-0,012766787	0,025820199	-0,000466515
0,173054208	0,132847803	0,061717322	0,768724836	0,230568288	0,03454301	0,167053964	0,190989301	0,046407479	0,046407479	-0,034359865	-0,025161422	-0,017047002	-0,038459207
0,052038272	0,029924293	0,015658043	0,016500406	0,08364188	0,030215857	0,021381853	0,02015151	-0,008326864	-0,008326864	0,002506015	-0,021144007	0,009467009	-0,004339586
0,13169469	-0,023731774	0,074883679	-0,027411885	0,104633961	0,117034625	0,118503307	0,117673683	0,042257306	0,042257306	-0,025839023	-0,049819469	-0,05073416	-0,065326319
0,165108144	0,151330361	0,152080525	0,095034475	0,424063209	0,23170101	0,262272018	0,264567341	0,068020618	0,068020618	0,048587034	0,085543316	0,014991978	0,082966831
0,150973365	0,199495683	0,097051723	0,121767841	0,289616378	0,184093591	0,204485419	0,202542192	0,033053029	0,033053029	0,00460748	-0,044515318	0,002475283	-0,030443804
0,377574096	0,154717654	0,296756914	0,185943681	0,117954393	0,68456763	0,384187734	0,381495879	0,020298483	0,020298483	-0,031509869	0,045791669	-0,010876597	0,045958861
0,145168897	0,200105953	0,09653646	0,066891089	0,091411514	0,334696348	0,148705125	0,147704911	0,113928055	0,113928055	-0,001052864	0,039564233	-0,002212995	0,03001664
0,268339767	0,117406081	0,115611045	0,083973915	0,040009687	0,516008074	0,281867065	0,279536844	-0,002088846	-0,002088846	-0,045301446	-0,026419073	-0,009141493	-0,021691631
1	0,208319251	0,213867219	0,208881463	0,136947383	0,707585476	0,411315733	0,408135788	0,033909468	0,033909468	0,017751078	0,03909662	0,014356933	0,031906801
0,208319251	1	0,061227465	0,126365444	0,147024703	0,363638446	0,155430668	0,154391776	0,086473924	0,086473924	0,06311125	-0,034988271	0,012299354	-0,012231194
0,213867219	0,061227465	1	0,085739536	0,283879282	0,641000973	0,598501184	0,593776077	-0,074147507	-0,074147507	0,142965514	0,229507838	0,017612006	0,256269035
0,208881463	0,126365444	0,085739536	1	0,184836345	0,225632722	0,161448001	0,192573698	0,041073532	0,041073532	-0,019272714	-0,010306045	0,009467009	-0,02000886
0,136947383	0,147024703	0,283879282	0,184836345	1	0,251382188	0,596496145	0,602317708	0,008497083	0,008497083	0,632025315	0,519282033	0,240129629	0,608436359
0,707585476	0,363638446	0,641000973	0,225632722	0,251382188	1	0,648723947	0,643760964	0,017291645	0,017291645	0,037251352	0,115629415	0,007633967	0,12739393
0,411315733	0,155430668	0,598501184	0,161448001	0,596496145	0,648723947	1	0,993821256	-0,029321191	-0,029321191	0,383066333	0,326612059	0,078768506	0,377463122
0,408135788	0,154391776	0,593776077	0,192573698	0,602317708	0,643760964	0,993821256	1	-0,031633861	-0,031633861	0,386152317	0,329266885	0,076498898	0,379348556
0,033909468	0,086473924	-0,074147507	0,041073532	0,008497083	0,017291645	-0,029321191	-0,031633861	1	1	-0,033776488	-0,038432657	-0,069271468	-0,044758734
0,033909468	0,086473924	-0,074147507	0,041073532	0,008497083	0,017291645	-0,029321191	-0,031633861	1	1	-0,033776488	-0,038432657	-0,069271468	-0,044758734
-0,017751078	0,06311125	0,142965514	-0,019272714	0,632025315	0,037251352	0,383066333	0,386152317	-0,033776488	-0,033776488	1	0,334067425	0,112879746	0,475245179
0,03909662	-0,034988271	0,229507838	-0,010306045	0,519282033	0,115629415	0,326612059	0,329266885	-0,038432657	-0,038432657	0,334067425	1	0,10111876	0,937743656
0,014356933	0,012293354	0,017612006	0,009467009	0,240129629	0,007633967	0,078768506	0,076498898	-0,069271468	-0,069271468	0,112879746	1	0,26739841	0,26739841
0,031906801	-0,012231194	0,256269035	-0,02000886	0,608436359	0,12739393	0,377463122	0,379348556	-0,044758734	-0,044758734	0,475245179	0,937743656	0,26739841	1
-0,001457173	-0,011771832	0,117912916	0,030474768	0,424323014	0,066459169	0,248194966	0,247143723	-0,056403705	-0,056403705	0,161159938	0,173880752	-0,00227044	0,175700712
-0,001457173	-0,011771832	0,117912916	0,030474768	0,424323014	0,066459169	0,248194966	0,247143723	-0,056403705	-0,056403705	0,161159938	0,173880752	-0,00227044	0,175700712
NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
-0,009589008	-0,01361591	0,023940814	0,052920387	0,053694001	-0,006597005	-0,002200245	-0,002689705	-0,029392647	-0,029392647	0,011777581	-0,019782297	0,051943274	0,013533232

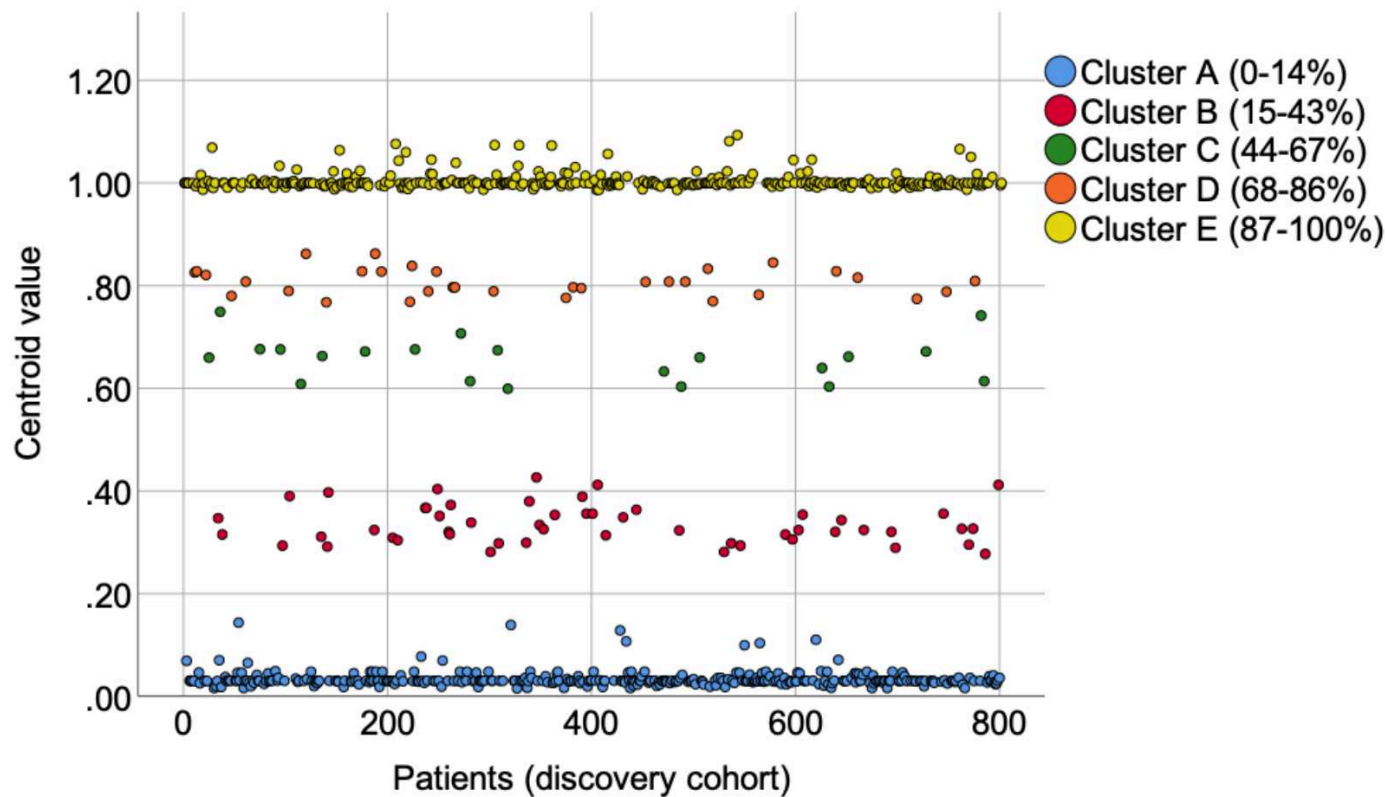
Table with 14 columns: demographism, skin_vascul_, livedo_, urticaria_, ascites_, hepatitis_, mes_vasculit_, enteropathy_, pneumonitis_,ILD_, alv_hemorrhage TTP_, Splenomegaly_ epi_scleritis_. It contains 49 rows of numerical data.

uveitis_	myocarditis_	aRNP_	aSSA_	aSSB_	Raynaud_	Myositis_	SLE
-0,080836801	0,011682152	0,074707022	0,013731288	0,00934766	0,11163453	-0,0726811	0,474297902
-0,023751655	-0,015793362	-0,01925046	0,013187922	0,010766569	-0,049155703	-0,034691513	0,106836289
0,07166315	-0,061969117	-0,022396373	0,010167606	0,008333938	0,129067229	-0,046736698	0,405077416
0,128183476	-0,034687629	-0,013681746	-0,047882733	0,013071307	0,003032094	-0,04054383	0,206779942
-0,067758092	-0,036814381	0,010889423	-0,015602632	0,023747283	0,052391414	-0,003698655	0,216853619
-0,0307921	0,14671701	-0,037508908	-0,066440964	-0,035034243	-0,046419974	-0,04497474	0,082206
-0,026388808	0,045896936	0,042914912	-0,018149017	0,018711565	-0,076106195	-0,038543321	0,10383448
-0,012938729	-0,008603444	0,065043187	0,028160505	-0,029144825	-0,033699701	-0,018898224	0,055728341
-0,026205922	0,081242782	0,113349276	0,142472903	0,120644042	-0,038975485	-0,004551133	0,253601818
-0,057555839	0,035018744	0,185664869	0,067940876	0,062202609	0,027784401	-0,05017359	0,343173121
-0,09897422	0,007890193	0,095417831	0,177088829	0,101988205	0,199250146	-0,051282259	0,569540562
-0,094224659	0,028037638	0,121652418	0,083857522	0,086002348	0,110307548	-0,095684751	0,734918883
-0,095140549	0,033325782	0,102898661	0,062166832	0,053402693	0,093044331	-0,094295417	0,60606032
-0,084341868	-0,005803892	0,048380868	0,011218119	0,030108031	0,111049119	-0,035168997	0,528498337
-0,026809513	-0,017826646	-0,02753327	0,017679289	0,016708455	-0,036048562	-0,0391578	0,125163081
-0,041390749	-0,043009514	0,030908126	0,014139526	0,026003266	0,083541283	-0,078359866	0,313240755
0,128632726	-0,034584961	-0,013254084	-0,047088847	0,01363258	-0,000826753	-0,040260026	0,205456283
-0,067758092	-0,036814381	0,010889423	-0,015602632	0,023747283	0,052391414	-0,003698655	0,216853619
-0,0307921	0,14671701	-0,037508908	-0,066440964	-0,035034243	-0,046419974	-0,04497474	0,082206
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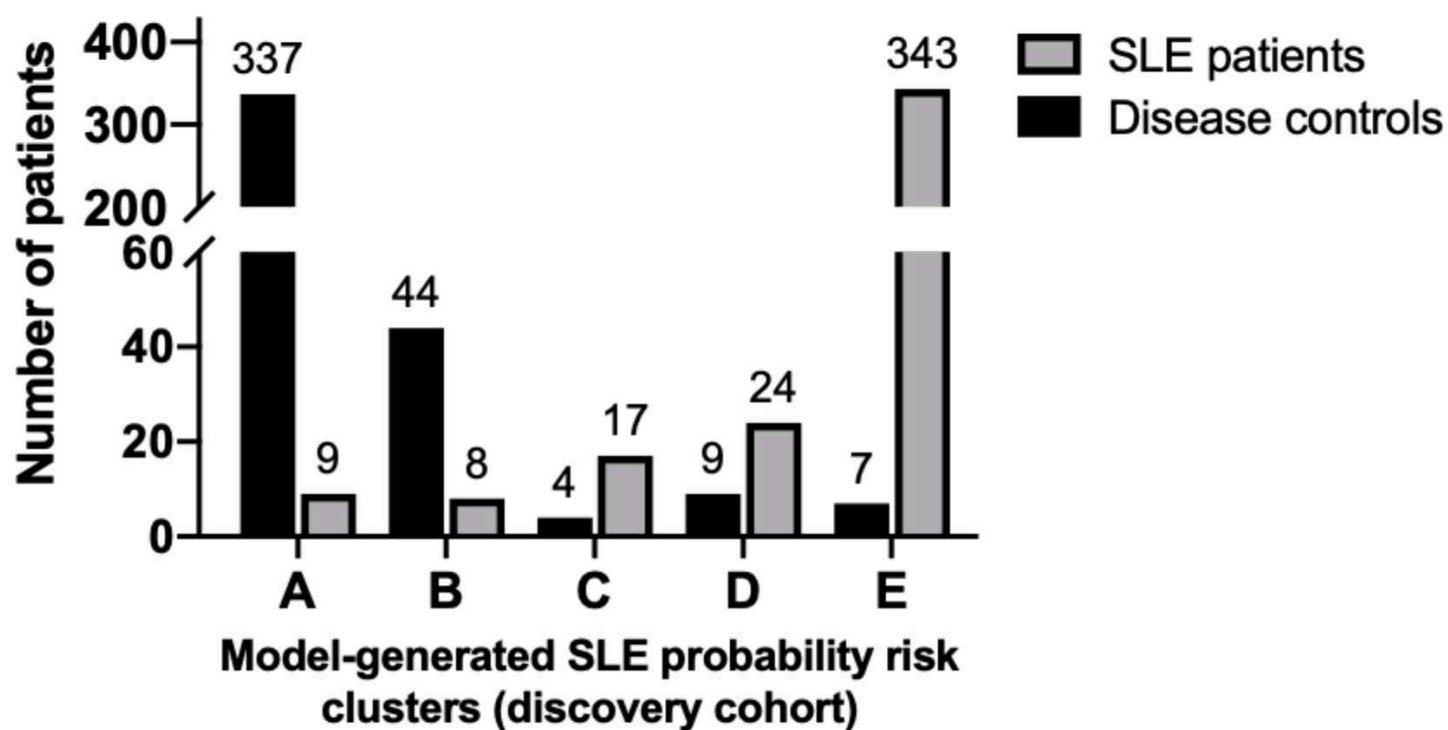
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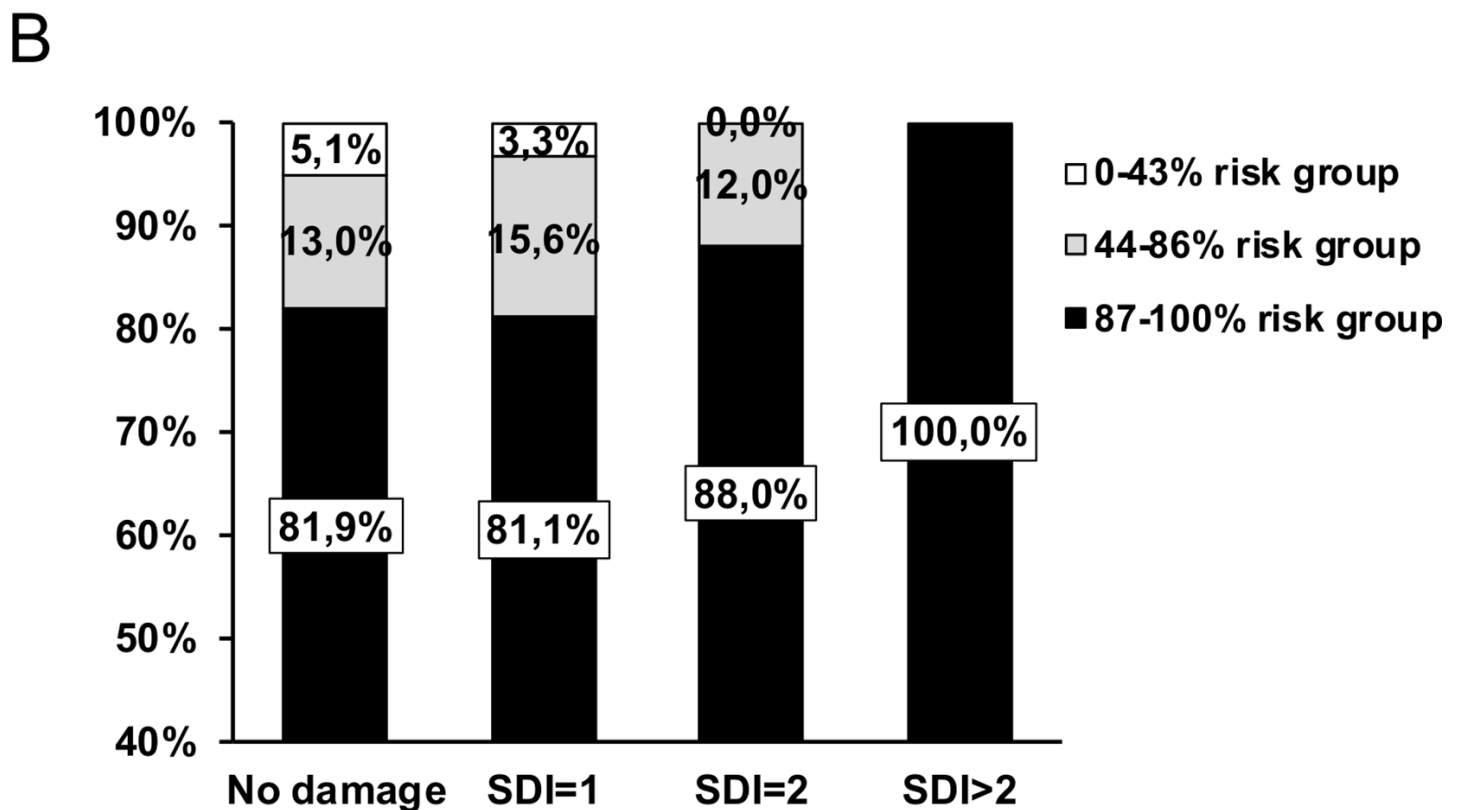
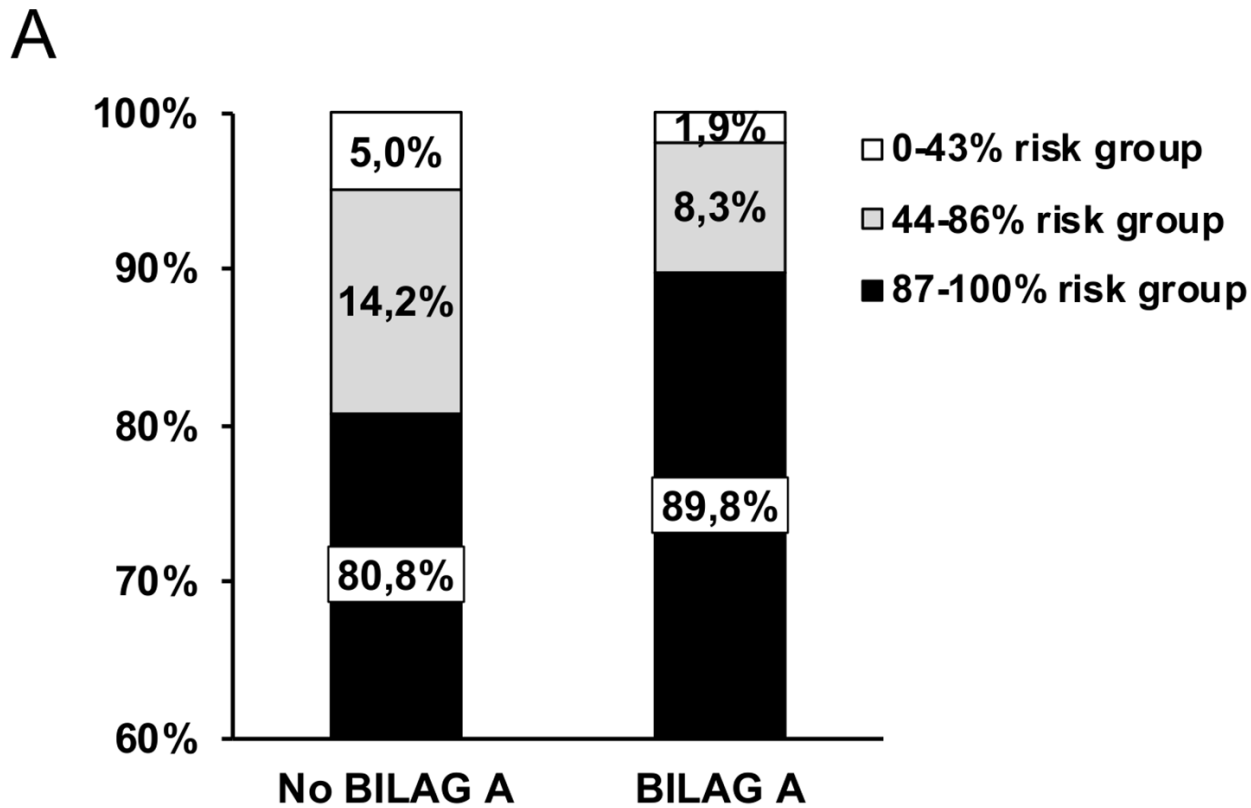


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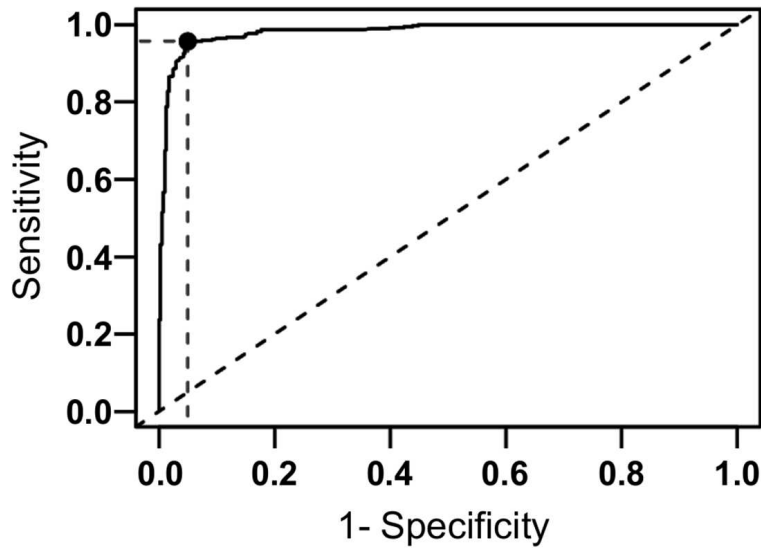


B



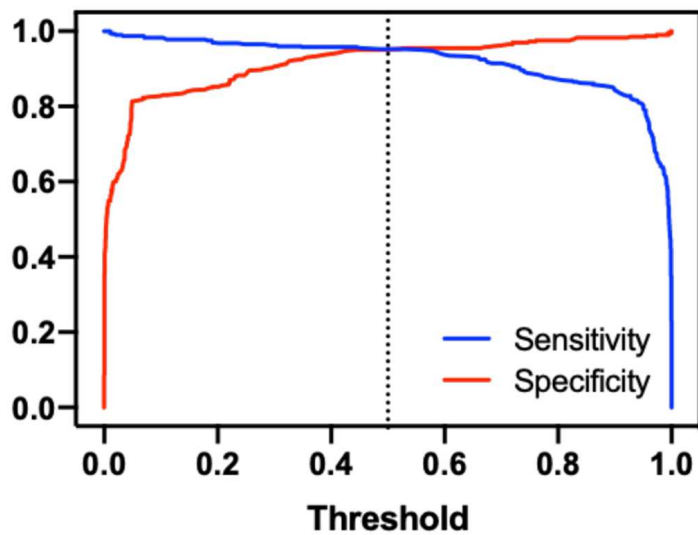


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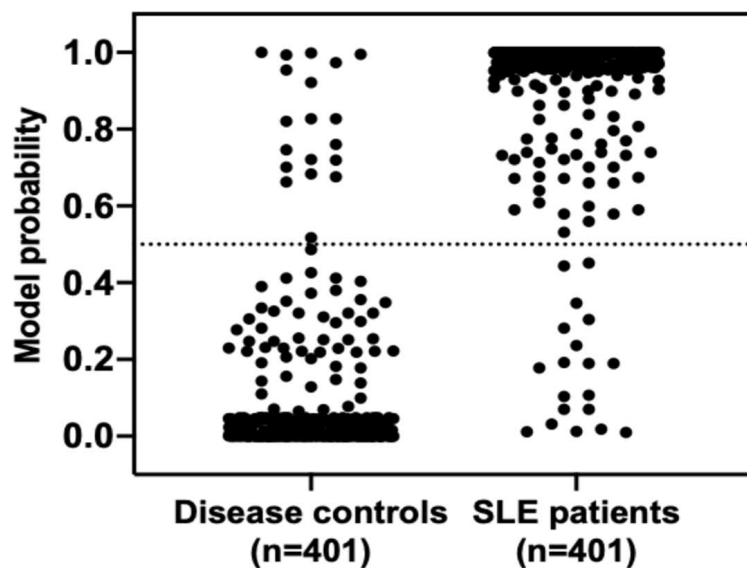


Threshold	Youden's index
≥ 0.30	0.870324
≥ 0.40	0.897756
≥ 0.50	0.905237
≥ 0.60	0.892768
≥ 0.70	0.877805

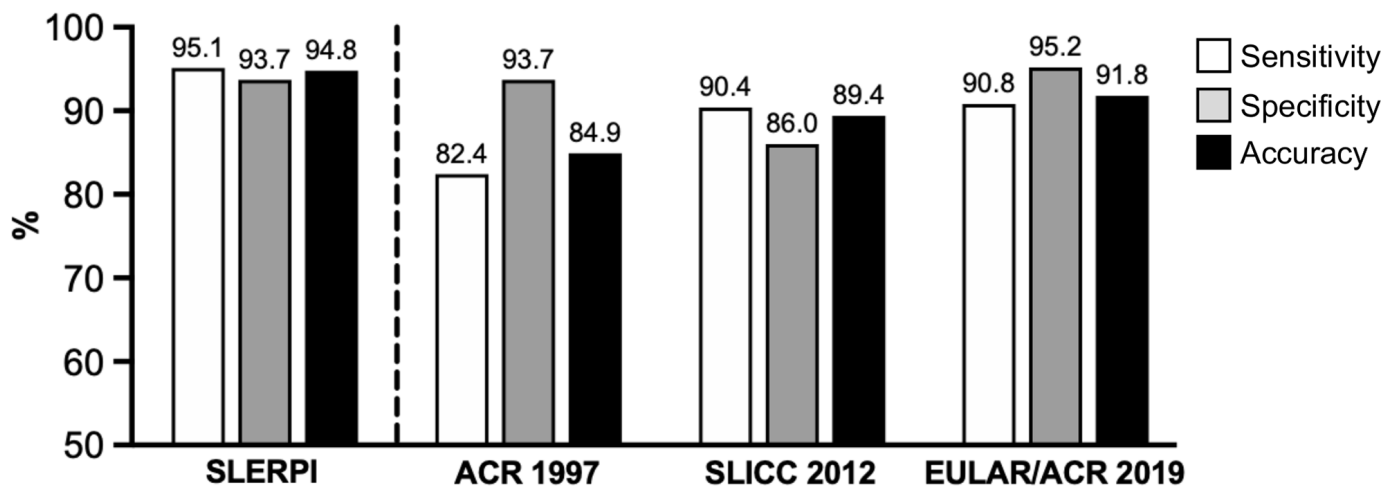
B



C



A



B

