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Abstract title

Physical and transcriptional characterization of human urinary stem cell populations

Abstract text

Urine-derived stem cells (USCs) represent a precious tool to be used in a broad field of applications such as research, pre-clinical and clinical studies. Nevertheless, knowledge about these cells, also in view of using them as native USCs or directly reprogrammed into specific cell lines, is poor. We have profiled the transcriptome of native and MyoD induced USCs (from both healthy and DMD subjects) using RNAseq. We found great variability across individuals probably due to the co-presence of distinct cell types, we and other have already described. Specific surface markers to select different USCs subpopulations are still missing, therefore we used the new technology Celector® (StemSel Ltd.). This instrument separates cells based only on their physical properties: dimensions, morphology, density. Three different fractions (F) were obtained and analyzed for canonical mesenchymal markers (CD90, CD73, CD105, CD44) by flow cytometry. CD90 and CD105 were mildly higher in F2 and interestingly, F3 showed an enrichment of CD146 level, a pericyte marker. Further characterization of these two cell populations is ongoing. These preliminary data confirm that USCs are composed by heterogeneous cells and further studies will define the different properties. The fine characterization of USCs populations makes USCs appealing as source of patient-specific cells to be used for different scopes, as mutation detection, or cell reprogramming.

Topic

New advances across the neuromuscular field

Presentation preference

Poster presentation

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