

DBT-THSTI, DBT-NII study shows umbilical tissue better source for stem cell therapy

New Delhi, Dec 03: Mesenchymal stem cell (MSC)-based cellular therapies have shown a lot of promise against cardiovascular ailments, autoimmune diseases, neurological diseases, and others. Mesenchymal stem cells are derived from two different sources of fetal tissues - umbilical cord blood (UCB) and tissue (UCT). Isolation of MSCs from human umbilical cord and its various compartments is a preferred alternative because of its ease in harvesting, relatively greater stem cell numbers, and increased 'stemness' potential.



Dr. Suchitra Gopinath's team at DBT-Translational Health Science and Technology Institute (DBT-THSTI) and their partners at DBT-National Institute of Immunology (NII) conducted a comparative analysis of UCB and UCT MSCs. They found that UCT MSCs exhibited 'greater yield, higher purity, shorter culture time, and lower rates of senescence in culture compared to UCB MSCs'.

In the recent study that they published in the journal *Science Reports*, they showed that UCT MSCs differentiate more robustly into muscle than UCB MSCs. This is an important study for her team that is focused on identifying molecular mechanisms mediating lean muscle mass proportions in utero and the maternal factors that influence infant body composition.

She is particularly interested in lean muscle development due to micronutrient deprivation in mothers. The publication suggests that in comparison to large volumes of UCB that are routinely used to obtain MSCs and with limited success, UCT is a more reliable, robust, and convenient source of MSCs for therapeutic purposes.

Link to the research paper : <https://pubmed.ncbi.nlm.nih.gov/33149204/>

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Links: <https://thsti.res.in/>, <http://www1.nii.res.in/>