

**Superior and simple method to isolate very small embryonic-like stem cells (VSELs)
without the Use of Flow Cytometry**

- Very small embryonic-like stem cells (VSELs) are pluripotent and most primitive stem cells that exist in all adult organs, albeit in few numbers. VSELs primarily serve as a back-up pool, differentiate into adult stem cells and thus help maintain life-long tissue homeostasis. They have true regenerative potential compared to the adult stem cells, 'tissue specific progenitors' but with limited ability.
- This patent technology relates to a simple process to isolate VSELs without labeling cells with antibodies for flow sorting. Our method is simpler and minimizes the lab manipulation.
- This technology can be used for (i) cord blood banking (ii) autologous stem cell therapy (iii) drug screening and toxicity evaluation on human stem cells (iv) to isolate and study (cancer) stem cells in leukemic bone marrow/peripheral blood samples and solid tumors.
- **Milestones achieved:**
 - **IP status:** An Indian patent has been granted and patent number is 287658
 - **USP of technology:**
 - A simpler approach to isolate VSELs from bone marrow, cord blood or any other solid tissues without the use of sophisticated & expensive Flow Cytometry.
 - It is cost effective, simple and useful for the mass population residing even at rural areas.
 - Offers an innovative approach to screen 'lead' molecules by the Pharma companies to gauge their effects on proteome, genome and most importantly 'epigenome' of human stem cells.
- Technology was developed at National Institute of Research in Reproductive Health, Mumbai.
- ICMR is seeking potential collaborators for the validation of technology.