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| Applications   * Culture and propagation of human embryonic stem cells * This method may enable easier FDA approval for stem cell therapies * May allow stem cells to be used in humans   Advantages   * Risk of contamination due to MEFs is eliminated * Delivers greater yields of stem cells * Variability and discrepancies due to the presence of MEFs is eliminated * Possibility of generating "off the shelf" powders   InventorsRaj R. Rao, Ph.D.  Technology Status U.S patent application has been filed.  Contact  **Maureen C. Kelly, Ph.D.**  Licensing Associate  [mckelly@vcu.edu](mailto:mckelly@vcu.edu)  (804) 828-4200 | **Market Need**  Stem cells are expected to become the basis for treating diseases such  as Parkinson’s disease, diabetes and heart disease. Currently, culturing  human embryonic stem cells (hESCs) requires the use of mouse  embryonic fibroblasts (MEFs) or other non-human derived biological  materials, such as Matrigel. The major drawback of this is the  possibility of xenogenic contamination and variability in experimental  results. Future research and clinical implementations of hESC will  require the use of a defined medium and a non-human free culture  method.  **Technology Summary**  This is a novel method developed that uses acellular substrates to  continuously culture and propagate undifferentiated human embryonic  stem cells. Acellular substrates will eliminate the use of MEFs and  support cell lines that required a feeder layer or co-culture as growth  condition. This invention will deliver yields several times greater due  to the presences of more surface area. |
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