KANSAS STATE UNIVERSITY | Vice President for Research

Testimony
SB 199
Presented to the Senate Public Health and Welfare Committee
Monday, February 25, 2013
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Madame Chair and Members of the Committee, I appreciate the opportunity to submit this testimony to the Committee.

Research at Kansas State University has produced a patented technology for isolating, storing, and using multipotent mesenchymal stromal cells (MSCs) derived from the Wharton's jelly of the umbilical cord (referred to as matrix cells). Matrix cells can be collected after umbilical cord blood collection without impacting cord blood collection. Matrix cells serve as an alternative to other MSC sources, including adult bone marrow, adipose-derived MSCs or umbilical cord blood-derived MSCs.

Advantages of using these matrix stem cells identified by researchers at K-State include:

- Application to any animal with an umbilical cord, i.e., humans, horses, companion animals, food animals, laboratory animals, etc.
- Matrix cells are easily expanded and can be grown rapidly in culture
- Largest population of stem cells yet identified (and distinct from stem cells found in umbilical cord blood)
- Matrix cells express genes from all three embryonic germ layers – endoderm, mesoderm, and ectoderm
- Matrix cells grow more rapidly and longer in culture than adult bone marrow MSCs, have a higher initial colony forming unit-fibroblast frequency which is the best *in vitro* marker of MSCs, and have a significant population of ganglioside GD2 positive cells, which has been reported to be a marker for primitive mesenchymal stem cells
- Matrix cells *have been shown to be non-tumorigenic* in animal models tested to date, and therefore have fewer concerns compared to other multipotent and pluripotent cells

The College of Veterinary Medicine at K-State is home to the Midwest Institute for Comparative Stem Cell Biology. The Institute exists to further basic and applied research in stem cells and related biotechnology in animals and humans and to extend that discovery through education and commercialization. The institute is uniquely situated to leverage research capabilities through collaboration among Kansas State University, the University of Kansas, the Kansas University Medical Center, and scientists with similar interests at any other institution.

Finally, the Kansas State University Research Foundation (KSURF) is the owner of a patent for stem cells that are isolated from the umbilical cord matrix (not the cord blood). KSURF also has a patent to use these cells for the treatment of Parkinson's disease.

Thank you again for the opportunity to submit testimony today.

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