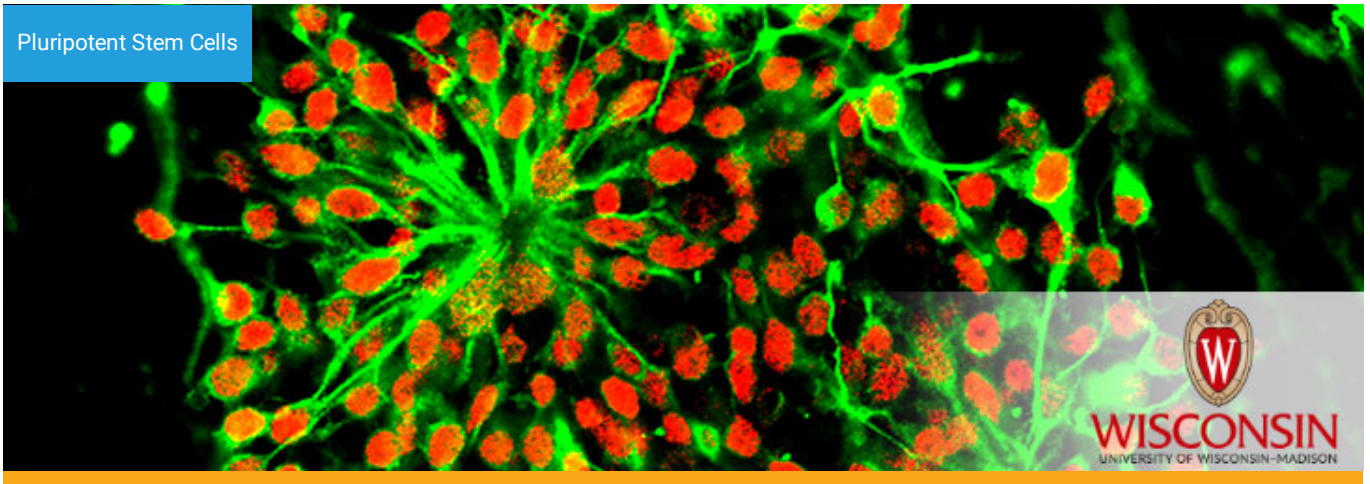




MEDIUM CONTAINING PIPECHOLIC ACID AND GAMMA AMINO ACID AND CULTURE OF EMBRYONIC STEM CELLS

[View U.S. Patent No. 8,158,424 in PDF format.](#)

WARF: P09119US

Inventors: Tenneille Ludwig, James Thomson

The Invention

Previous methods for culturing primate pluripotent stem cells have required either fibroblast feeder cells or a medium which was exposed to fibroblast feeder cells to maintain the stem cells in an undifferentiated state. It has now been found that high levels of fibroblast growth factor in a medium together with at least one of gamma aminobutyric acid, pipecolic acid, and lithium, enables pluripotent stem cells to remain undifferentiated indefinitely through multiple passages, even without feeder cells or conditioned medium. Without beta-mercaptoethanol, the medium improves cloning efficiency. Also, a matrix of human proteins can be used to culture the undifferentiated cells without exposing the cells to animal products. Further disclosed are new primate pluripotent cell lines made using the defined culture conditions, including the medium and the matrix. Such new cell lines will have never been exposed to animal cells, animal products, feeder cells or conditioned medium.

Additional Information

For More Information About the Inventors

- [James Thomson](#)

Tech Fields

- [Pluripotent Stem Cells : Culture](#)

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