Docket #: S23-388

New method of maintaining/sustaining mammalian embryonic stem cell pluripotency in culture

Pluripotent stem cells (PSCs) arise during early embryogenesis and can give rise to entire animals. Yet, comprehension of pluripotency regulation remains incomplete, highly species-specific, and primarily limited to mouse and human.

To date, no single culture medium has been shown to support the maintenance of pluripotent stem cells (PSCs) from evolutionarily distant mammalian species such as mouse and human across distinct pluripotency states, without the addition of supplemental cytokines or small molecules.

Stanford researchers have developed a novel, species-agnostic method for culturing PSCs using a single, universal medium. This system relies on a chemically defined basal medium supplemented with a proprietary additive, enabling the maintenance of PSCs without the need for feeder cells, growth factors, cytokines, or animal serum.

Stage of Development
Proof of concept: in vitro

Applications

- Pluripotent stem cells
- Generic cell culture boosting agent for mammalian cell cultures

Advantages

- Works with cells of mammalian species
    - Tested in mouse and human cells
- No growth factors or cytokines

Patents

- Published Application: WO2026112306

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