Laboratory materials and reagents.

Xeno-free culture and differentiation medium to convert hPSC to neural progenitors.

A research group from Andalusian Public Health System has developed a xeno-free culture and differentiation medium to successfully convert hPSC to regional specific neural progenitors. The neural progenitors give rise in vitro and in vivo to progeny representing the three major neural lineages: oligodendrocytes, astrocytes and mature electrophysiologically functional neurons.

Oficina de TRANSFERENCIA DE TECNOLOGÍA
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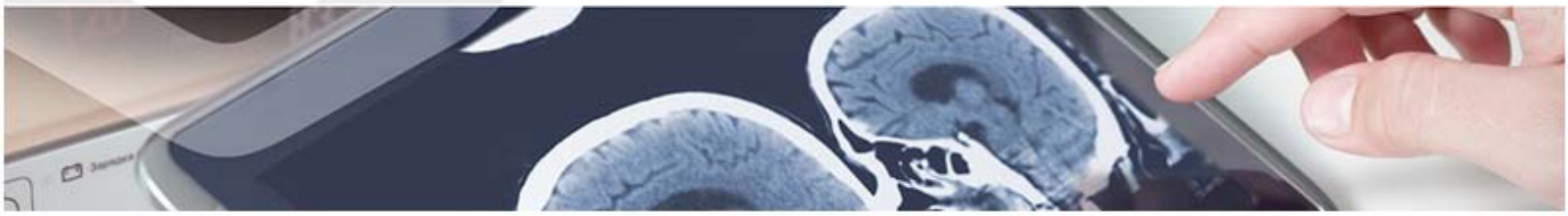

Description

Up to date, human pluripotent stem cells (hPSC) differentiation towards defined neural lineage involves formation of embryonic bodies (EBs) with wide heterogeneous nature, or use undefined factors such as stromal cells or animal extracellular matrix to form neuroepithelial structures (rosettes) followed by retinoic acid (RA) exposure. The majority of these cell lines are differentiated in the presence of animal feeder cell lines or animal components, which bears risk of xenogenetic pathogen cross-transfer, limiting thus their medical applications.

The research group has developed a xeno-free culture and differentiation medium to successfully convert hPSC to regional specific neural progenitors. The neural progenitors give rise in vitro and in vivo to progeny representing the three major neural lineages: oligodendrocytes, astrocytes and mature electrophysiologically functional neurons.

The key of this new culture medium is based on the use of one main component, which use has been protected for this application.

Advantages

1. Avoid generation of EBs, therefore substantially decrease the derivation of cells of mesodermal or endodermal origin.
2. Allows efficient futher generation of regional specific neuronal subtypes in much shorter time comparing other similar approaches.
3. As an animal-free medium, potential clinical use of neural progenitors obtained would be more feasible.
4. This protocol is reproducible.

Intellectual Property

The technology is protected by a european patent application.

Aims

The research group is looking for a collaboration agreement for further development or a licence agreement.

Classification

Area: Laboratory material and reagents
Technology: Cell Therapy
Pathology: Central Nervous System

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