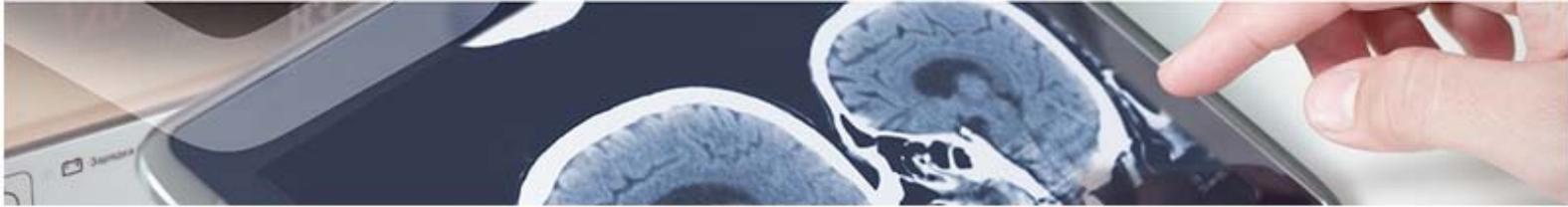


Laboratory material and reagents

Method for generating Induced Pluripotent Stem Cells (iPSC)

A research group from Andalusian Public Health System has developed a method for inducing a somatic cell to acquire a less differentiated phenotype and for generating Induced Pluripotent Stem Cells (iPSC)



Description

To date, the use of iPS cells has been limited by the methods available for their generation. iPS cells are traditionally made by introducing a set of pluripotency associated genes, referred to as reprogramming factors, into a somatic cell.

The traditional set of reprogramming factors, include the genes encoding the transcription factors OCT3/4, SOX2, c-MYC and KLF4. However, iPS cell derivation using this traditional approach is inefficient, with only about 0.01%-0.1% of the transfected cells becoming pluripotent. What is more, two of the reprogramming factors, c-MYC and KLF4, are known oncogenes. Indeed, 20% of chimeric mice derived from iPS cells acquire cancer. The concern over the oncogenic potential of traditionally derived iPS cells has limited their therapeutic development.

The research group has discovered two specific factors present in the human oocyte, which play crucial roles in somatic cell reprogramming. One of them is a new reprogramming factor and the other is a factor that induces the reprogramming process.



Advantages

Overexpression of the new reprogramming factor and OCT-4, together with the addition to the culture medium of a new reprogramming inductor, generates colonies with typical iPSC morphology. These colonies were fully reprogrammed, showed normal karyotype and expressed standard stem cell markers.



Intellectual Property

The technology is protected by a US 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: Various