

Stem cells in development and the perspectives of cellular reprogramming for regeneration Células troncales en el desarrollo y las perspectivas de reprogramación celular para la regeneración

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Multicellular organisms develop from one cell: the zygote. During ontogeny, cells derived from the zygote display different cellular programs that are stabilized through epigenetic mechanisms. The programs of stem cells seem more inclusive, and during the process of differentiation a larger number of genes are silenced than activated. The reactivation of pluripotency recovers of the stem cell program in terminally differentiated cells has been achieved experimentally. This process, called reprogramming, brings new hope for the development of a regenerative medicine with new capabilities for the treatment of chronic diseases, without the ethic restrains imposed by the use of embryonic cells.