



Hypoxic Culture of Mesenchymal Stem Cells and Associated Implications in the Era of Cell Therapy



Nicholas Robert Forsyth

Reader in Stem Cell Biology
Institute for Science and Technology in Medicine
Keele University

Stem cells are currently used in clinical applications and have great potential in regenerative medicine. The effect of oxygen tension on stem cell physiology has been studied for over 30 years and it has been found that cultivation under low oxygen tensions maintained a significantly higher number of long-term colony initiating cells relative to cultures under ambient (20%, v/v) oxygen concentrations. It has also been seen for several other stem and progenitor cell populations under hypoxic conditions resulted in enhanced proliferation and maintenance of their native states. This seminar focuses on the role of oxygen levels on mesenchymal stem cells and the physiological relevance of low oxygen tension as an environmental parameter that benefits stem cells expansion and maintenance. Also provides a context for reviewing the impact of these findings on tissue engineering approaches and the need to specifically regulate the oxygen content of the cellular microenvironment in order to optimize in vitro tissue development.

Lugar: 3ª Planta

Día: 26/11/14

Hora: 10:30 h

