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Human stromal progenitor cells for immunomodulation and tissue repair

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Abstract

Bone marrow derived marrow stromal cells (MSCs) possess a set of several fairly unique properties which make them ideally suited both for cellular therapies/regenerative medicine, and as vehicles for gene and drug delivery. These cells are easy to isolate, can be extensively expanded in culture without a loss of differentiativecapacity, they migrate to areas of injury, and have immunomodulatory properties. However, MSC are not invisible to the recipient's immune system, and upon in vivo administration, allogeneic MSC are able to trigger immune responses, resulting in rejection of the transplanted cells, precluding their full therapeutic potential. Here we will describe the development of immunological evasion strategies to reduce MSC immunogenicity allowing higher levels of engraftment in an allogeneic transplantation setting.

Biography

Graça Almeida-Porada, M.D.,Ph.D., is a Professor of Regenerative Medicine at the Institute for Regenerative Medicine, Wake Forest School of Medicine. Her research investigates the biological properties and regenerative capabilities of adult stem cells, with the goal of understanding disease processes and developing novel approaches to cell therapy and tissue repair. She is a reviewer and serves on the Editorial Board of multiple scientific journals. She has authored more than 100 scientific publications, reviews and book chapters.