

Title of the Abstract: Chemotactic properties of human amniotic fluid-derived stem cells (hAFSCs) in bone healing.

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Abstract:

Current treatment of large bone defects is based on autologous or allogenic bone grafts that still have several limitations. In the past few years, human amniotic fluid stem cells (hAFSCs) were evaluated for their osteogenic potential in the repair of bone defects due to the absence of ethic controversy and risk of teratocarcinoma formation. Thus, the aim of this study was to investigate the role of hAFSCs in the regeneration of critical-size bone defects in calvaria mouse model. For this purpose, we transduced hAFSCs with cherry red fluorescent protein and used a recipient transgenic mouse model carrying GFP fluorescent reporter to follow the fate of hAFSCs transplanted *in vivo* into Healos® construct and distinguish donor and host cells at the implant site. Our results showed that transduced hAFSCs can be tracked *in vivo* directly at the site of transplantation. Cherry red fluorescent hAFSCs were not present in the implant site after 3 and 6 weeks. Instead, the presence of a greater number of GFP-positive cells in the scaffold at the same time-intervals indicates that hAFSCs can recruit host cells during the repair process. Moreover, we observed that hAFSCs are able to attract mouse bone marrow stromal cells (mBMSCs) *in vitro*, suggesting a possible chemotactic property of their releasing soluble factors. These observations help clarify the role of hAFSCs in bone tissue repair.

Biography:

Dr. Mariangela Basile

In 2015 graduated in Pharmaceutical Chemistry and Technology, UdA Chieti, Italy. In 2013 active collaboration in conducting scientific research into Department of Pharmacy, General Pathology Unit, UdA Chieti, Italy. Since 2016 PhD student in Translational Medicine, Cell Biology Lab, Dept. of Medicine and Ageing Sciences, Inst. of Normal Human Morphology, UdA Chieti, Italy. In 2017/2018, research assistant at Center for

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Research Interests:
Processing of human placenta samples for light and electronic microscopy studies; isolation of human amniotic epithelial cells; immunohistochemical studies on histological sections of Burkitt Lymphoma and human amniotic membrane; *in vitro* and *in vivo* studies on human amniotic fluid stem cells (hAFSCs) in bone regeneration; *in vitro* and in *vivo* studies on Osteogenesis Imperfecta (OI).

References:

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Suggestions of colleagues/Professors/scholars to send invitation (if any)
Suggestions of Sessions to the conference (if any) Regenerative Medicine