

Vitiligo and Skincare Physicians Meeting

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Tumorigenicity assessment of cultured melanocytes *in vitro* and *in vivo*

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Vitiligo is a multi-factorial polygenic disorder with an incidence rate of 0.1-2.0% worldwide, characterized by patchy loss of pigment in the skin due to abnormal melanocyte function. Autologous cultured melanocyte transplantation is one of the most effective and safe therapeutic methods for treating vitiligo. Utilization of appropriate culture media and growth factors provide safe and efficacious system for culture of melanocytes. The aim of this study was to find the best culturing media and assess the cultured melanocytes *in vitro* and *in vivo*. The melanocytes were isolated from skin samples of 8 vitiligo patients and then cultured in MGM-M2. The best condition media was selected according to proliferation and MTT assessments. We characterized cells using immunocytochemistry with their specific antibodies. Karyotype, real time PCR and gene sequencing for detection of chromosomal instability, gene expression and mutation in important genes of melanoma in different passages (0, 1, 3, 5 & 7) were performed. The cells of different passages were injected to nude mice's skin for tumorigenicity assessments. A375, D10 and NA8 melanoma cell lines were cultured and characterized as control group. ICC results confirmed cultured cells are melanocytes, cytogenetic analysis and real time-PCR did not show any chromosomal instability and changes gene expression. Mutation in famous genes was not observed. No detectable tumors formed. Histopathology confirmed the presence of cultured melanocyte cells were not tumorigenic. Our data show cultured melanocytes of different passages were not associated with any tumor formation in nude mice as well as *in vitro* results support the safety of cells for transplantation.

Biography

Atefeh Shahbazi has completed her Master's degree in Biology in 2006 and was employed as a Research Assistant in Cell Therapy and Regenerative Medicine Center, Royan Stem Cell Institute in 2008. She is a Supervisor of Clean Room Lab in Cell Therapy Center and has some publication in reputed journals. She was a Visiting Researcher in 2010 at the Department of Stem Cell Biology, University Medical Center Groningen, Netherlands. She is currently a PhD student of Physiology, under supervision of Dr. Aghdami.

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