عنوان مقاله:

Blastema cells derived from rabbit ear show stem cell characteristics

محل انتشار:

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خلاصه مقاله:

Regeneration is a biological phenomenon, which takes place via two main mechanisms: first, dedifferentiation of mature cells followed by their differentiation into functional new cells and second,activation of endogenous somatic stem cells for regeneration of damaged or lost tissues. One of the best examples of healing process in mammals is the regeneration of damaged pinna in rabbits by blastema tissue. The aim of present study was to investigate culture requirements, proliferative properties and expression of some stemness factors in cells derived from regenerating blastema tissue obtained from rabbit pinna in vitro.The regenerating tissues were obtained from male New Zealand white rabbits by double punching of the pinna and cell culture conditions were set to derive and enrich the self renewing cells for further characterisation. The cells were subjected to survival and growth examinations in vitro, and expression of several stemness factors was studied in these cells using reverse transcription polymerase chain reaction (RT-PCR). Results revealedthat the derived cells are rather immortal, as they have been growing for more than 120 passages in culture upuntil this report. Furthermore, RT-PCR and flow cytometry analyses showed that these cells express a numberof stemness related genes including Oct4 and Sox2. In conclusion, in this study, stem like cells were derived from blastema tissue of rabbit ears for the first time, showing great self renewing capacity, which provides a suitable in vitro model for regeneration studies. Moreover, they could be considered as a good source of stem like cells for future applications

کلمات کلیدی:

regeneration, blastema tissue, pluripotency, stem cell