THE EFFECT OF PLATELET RICH PLASMA ON MESENCHYMAL STEM CELLs (MSCs) DIFERENTIATION INTO CHONDROBLAST

Abstrak :

Forewords: Analyzed whether adding platelet rich plasma to mesenchymal stem cell culture on growth media and chondrogenic media had any effect on stem cell’s proliferation and differentiation into chondroblast.

Aims: Find out the effect of platelet rich plasma on mesenchymal stem cell’s differentiation and proliferation into chondroblast on invitro media.

Methods: Randomized control group post test only design. Blood was taken from the rabbit’s vein to be processed into platelet rich plasma (PRP). Mesenchymal Stem Cell (MSC) was harvested from the bone marrow of the rabbit to be cultured. The MSC’s culture were divided into three groups of modification. The first group was combination of MSC added with Complete Culture Medium (CCM) and Chondrogenic Differentiation Medium (CDM) without PRP as control group. The second group had the same combination as the first group with extra 5% PRP. The third group had the same combination as the first group with extra 10% PRP. The results were evaluated in the following 21 days.

Results: The group that received extra 5% PRP had significant increase of chondroblast count compared to the group without PRP addition (p=0.033). The same result also occurred on the groups that received extra 10% PRP compared to the group without PRP addition (p=0.028). There were no significant differences between both the second and the third group chondroblast count (p=0.203).

Conclusions: There was a significant effect of platelet rich plasma on mesenchymal stem cell’s differentiation and proliferation into chondroblast on invitro media

Keyword :
Chondroblast, Complete Culture Medium, Condrogenic Differentiation Medium, Mesenchymal Stem Cell, Platelet Rich Plasma

Daftar Pustaka :

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