

ABSTRACT

CHARACTERIZATION PHENOTYPE OF STEM CELLS WITH EXPRESSION OF P63, CD105, OCT4 AND STEM CELLS IN CULTURE NICHE LIMBAL (STUDY IN VITRO)

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Limbal stem cells right now is one of the therapies that can be used in corneal abnormalities due to the limbal stem cell deficiency. Occurrence of damage to the surface of the eyeball that include the cornea until the conjunctiva is one of the causes of changes in visual acuity eye, can even lead to blindness. If damage to the corneal limbal be extensive so on, can cause the limbal stem cell deficiency. To be classified as a stem cell, a cell must have a number of characteristics, which, among other: undifferentiated, self renewal, and can differentiate into more than one type of cell (multipotent / pluripotent). Past research has shown that stem cells can be differentiated limbal with corneal epithelial stem cells, which includes markers such as p63. p63 is a putative marker of limbal stem cell deficiency. The purpose of this study is to prove the characterization of p63 marker to see the nature of the pluripotent cells or multipotent on several different passage, to try to compare the characterization of the nature of the other markers, namely CD105 as one of the important markers of mesenchymal cells, and Oct4 as one important marker of embryonic cells. Mesenchymal stem cell culture are explored from the limbal. Stem cells that had been in culture embedded in the glass disc, and fixed at early passage, namely in the range 4 passage, 4 days post-planting culture and late passage, passage 8 about 12 days, on day 4 immunocytochemistry staining and examination of the expression of p63, CD105, and Oct4. In statistical test observations limbal stem cell differentiation by p63 expression was found that there were differences in the number of cells at early passage and late passage, which means more stem cells into multipotent properties compared to the direction corresponding to the nature of pluripotent mesenchymal cells. While CD105 which is a marker of Mesenchymal cells obtained in large numbers in the early passage than late passage, which is more towards multipotent properties. Likewise with Oct4 which is a marker of embryonal stem cells obtained were expressed in early rather than late passage passage that indicates the nature of pluripotent.

Keyword: Stem cells, Limbal, Culture, P63, Oct4, CD105, Passage.