

Umbilical Cord-derived Mesenchymal Stem Cell as a Hepatic Cell Source for Regenerative Medicine

정보영¹, 윤희훈^{1,2}, 송계용³, 김영진², 박정극^{1,*}
¹동국대학교 생명화학공학과; ²라이프코드;
³중앙대학교 의과대학 병리학과
(jkpark@dongguk.edu*)

We have focused on UC-MSC as a stem cell source, because UC-MSC can be easily isolated and cultured from generally discarded cord tissue without any ethical problem. So we confirmed whether the isolated cell from cord by our protocol is one of MSCs or not using FACS and differentiation analysis. After that, we checked which condition can improve the differentiation of UC-MSC into hepatocyte. In addition to in vitro experiment, we transplanted UC-MSCs into rats with liver failure induced by bile duct ligation, carbon tetrachloride intoxication. As results, UC-MSCs could differentiate into hepatocytes expressing not only lineage markers (albumin, CK8, CK18) but also liver-specific functions (albumin and urea syntheses, cytochrome P450 activities) in vitro. Also they could successfully engraft into liver structure and express human specific hepatocyte markers. In conclusion, UC-MSCs will be a good stem cell source not only for hepatic cell therapy but also for bioartificial liver system in the field of regenerative medicine.