

간부전 치료를 위한 간줄기세포 이식

Hepatic Stem Cell Transplantation in Liver Failure

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Kyung Sik Kim, M.D.

Department of Surgery

Yonsei University of College of Medicine, Severance Hospital

E - mail : kskim88@yumc.yonsei.ac.kr

Abstract

Whole or partial liver transplantation has become one of the main treatment strategies for hepatic failure. The availability of a donor liver is the single most limiting factor in liver transplantation. In cell therapy, liver cells have been used clinically to bridge patients to whole organ transplantation and/or as an alternative to whole organ transplants. The crucial property that defines a stem cell is its ability to give rise to a large family of descendants, and at least some hepatocytes do exhibit this pluripotency. Thus hepatocyte - like cells derived from the bone marrow, embryonal stem cells, or placental sources can also be used. Stem cells of many types have been prodded and cajoled by combinations of growth factors, matrix and culture modifications to identify conditions that favor differentiation or transdifferentiation of stem/progenitor cells into hepatocytes. Additional studies are needed to determine whether hepatocyte - like cells derived from the bone marrow or other sources express the full complement of hepatic functions. If a sufficient number of differentiated hepatocytes can be produced from these stem cells, they could be useful in clinical transplantation programs.

Keywords : Hepatocyte transplantation;
Hepatic stem cell; Liver failure

; ;

(ultrafiltration) (hemodialysis),
(pheresis), (hemosorption)
가 (plasma-

. ,
.
.
가 .
.
,
, , ,
가

isoenzyme)
(3). (cop-
per toxicosis) 가 Long - Evans Cinnamon(LEC)
(4~6).
(ductular cell)
(7, 8).
F344
1. (Adult Hepatic Stem Cell) FNRL WB344
(plas- 가 (non oncogenic cell lines)
ticity) (telomere) 가 (5, 6).
가 (1). (lineage)
. FAH
가
(progenitor cell)
. Grompe 1 (tyrosinemia)
(hereditary tyrosinaemia type 1) (9).
Fumaryl acetoacetate hydrolase(FAH) (explant) 가
가 80
(2).
2. (Embryonal Stem Cell)
(primary adult hepatocyte) 가
(oval cell) (10, 11).
가 (embryoid body)
(AFP)
, , , ,
glucose 6 phosphatase (hybrid (12).

3. (Embryonal Stem Liver Cell, SLC/
Embryonal Bipotent Stem Precursor Cells of the
Liver, BSPCL)

가 가 .
가
22 .
(hepatic diver- 가
ticulum) (19).
(13) 4 ,
10~12 (14). , gamma glutamyl transpep-
(hepatoblast)가 tidase, plasminogen activator inhibitor type - 1,
(15, 16) cytokeratin 가
 .
(16). 가
가 가
(polyploid) .
가 . 가
(diploid) 가
(17). 가
가 CK - 19 가 .
(15, 18). 가 (16).
가 ,
가 가
(18). .
가 .
4 12 가
 .
 .
(murine feeder)가 (16) beta galactosidase
가 , P21 가

가 (23~25). FAH

(telomerase reverse transcriptase) (25). C - kit sca - 1 , Thy - 1

30~50

300 가 가

(20). 가

P450s 가

(parental cell) (perturba-
tion)

가 (26).
(stromal cell) (endothelial cell)
FAH

(21).
streptozo-
toxin

Pdx - 1 (27).
(polypoidy), (aneu-
ploidy)

가 가 가 가

가 가 가 가

4. (28). FAH
(hematopoietic stem cells)가
가 가
(extramedullary hema-
to-poiesis) 가
Dipepti-
dypeptidase IV(DPPIV) 가 5.
가 (22). 1974 가

가 (29),

가 5

52 3

(30). (35).

가 , (viability) (1~8) ,

가 , 65%

. Tang 7 3

153 (36) Tang

(31). (31) (pluripotent)

. 가

. 가

. 가

가 가

, 가 ,

가 5%

가

(32~34). Storm (identifica-

tion)

3 1 가

2 가 가

가

가 (32). Bilir .

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