



(11) **EP 1 473 360 A8**

(12) **CORRECTED EUROPEAN PATENT APPLICATION**

(15) Correction information:
Corrected version no 1 (W1 A2)
Corrections, see
Bibliography INID code(s) 22, 30

(51) Int Cl.:
C12N 5/02 ^(1980.01) **C12N 5/00** ^(1980.01)
C12N 15/00 ^(1980.01) **C12M 3/00** ^(1980.01)
C12M 3/02 ^(1980.01) **C12M 3/04** ^(1980.01)

(48) Corrigendum issued on:
28.07.2010 Bulletin 2010/30

(43) Date of publication:
03.11.2004 Bulletin 2004/45

(21) Application number: **04101846.6**

(22) Date of filing: **17.12.1991**

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU MC NL SE

(30) Priority: **17.12.1990 US 628343**
29.07.1991 US 737024
05.08.1991 US 740590

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
92904136.6 / 0 575 350

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Remarks:

This application was filed on 29-04-2004 as a
divisional application to the application mentioned
under INID code 62.

(54) **METHODS FOR THE EX-VIVO REPLICATION AND STABLE GENETIC TRANSFORMATION OF
HUMAN STEM CELLS**

(57) The present invention relates to methods for the
manufacture of a medicament for gene therapy, to human
bone marrow compositions obtained by said methods,
and to uses of said compositions for the manufacture of
medicaments. The method of the present invention is
characterized by a specific replacement rate of the cul-
ture medium for obtaining ex vivo human stem cell divi-

sion, and by the fact that said ex vivo human stem cells
are genetically transformed for the purpose of said gene
therapy. The replacement rate may be a rate of 50 to
100% daily replacement for a cell density of from 1×10^4
to 1×10^7 cells per ml of culture under physiologically ac-
ceptable conditions for the cells.

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