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(54) Title: LIVER ASSIST SYSTEM BASED ON HOLLOW FIBER CARTRIDGES OR ROTATING BIOREACTOR

(57) Abstract: A liver assist system includes (a) a cross-flow configured hollow fiber microfiltration cartridge or (b) a rotating bioreactor, loaded with viable hepatocytes and at least one oxygen source to promote hepatocyte viability. The rotating bioreactor liver assist system may also be fitted with an oxygen source(s) adequate to promote long-term hepatocyte viability, and is optionally fitted with a hollow fiber microfiltration cartridge serving as a filter to prevent the hepatocyte escape from the bioreactor into the subject. Such a system is used in a method to metabolize and/or detoxify molecules found in blood, plasma, or other perfusable fluid. The system provides restorative or substitutive liver function *ex vivo* in subjects with liver insufficiency, those in imminent risk of liver insufficiency, or those awaiting liver transplantation. Hepatocytes maintained in this system have the functional attributes of intact healthy liver, manifest by conversion of ammonia to urea and various drugs to their respective metabolites.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 5/00
US CL : 435/400, 370, 297.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/400, 370, 297.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,948,655 A (BADER) 07 September 1999 (07.09.1999), see entire document.	1-76
Y	US 5,605,835 A (HU et al) 25 February 1997 (25.02.1997), see entire document.	1-76

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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