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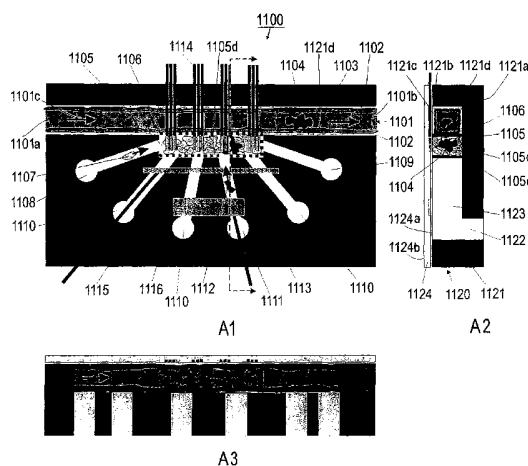
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(54) Title: BIOREACTORS WITH SUBSTANCE INJECTION CAPACITY



(57) **Abstract:** A bioreactor with substance injection capability. In one embodiment, the bioreactor includes a first substrate (1124) having a first surface (1124a), an opposite second surface (1124b) and edges. The bioreactor further includes a second substrate (1121) having a first surface (1121a) and an opposite second surface (1121b), defining a cavity (1121c) with a bottom surface (1121d), where the bottom surface (1121d) is located therebetween the first surface (1121a) and the second surface (1121b). The first surface (1124a) of the first substrate (1124) is received by the second surface (1121b) of the second substrate (1121) to cover the cavity (1121c) so as to form a chamber for receiving cells and a liquid medium. A port (1122) is formed in the second substrate (1121) between the bottom surface (1121d) and the first surface (1124a) of the second substrate (1121). As formed, the port (1122) is in fluid communication with the chamber to allow a stream of substances to be introduced into the chamber. The stream of substances is controlled so as to provide a gradient, or a concentration gradient of the substance, to the chamber. The stream of substance includes a substance affecting the growth of cells such as chemokine.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/288.5, 288.7, 293.1, 297.5; 422/82.01, 82.05, 101; 204/451

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,124,138 A (WOUDENBERG et al.) 26 September 2000, see "Summary of the Invention" section.	1-154
A	US 6,267,858 B1 (PARCE et al.) 31 July 2001, see entire document.	1-154

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

☐ See patent family annex.

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