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- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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(54) Title: MICROORGANISM CONCENTRATION PROCESS

(57) Abstract: A process for capturing or concentrating microorganisms for detection or assay comprises (a) providing a concentration agent that comprises an amorphous metal silicate and that has a surface composition having a metal atom to silicon atom ratio of less than or equal to about 0.5, as determined by X-ray photoelectron spectroscopy (XPS); (b) providing a sample comprising at least one microorganism strain; and (c) contacting the concentration agent with the sample such that at least a portion of the at least one microorganism strain is bound to or captured by the concentration agent.



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## INTERNATIONAL SEARCH REPORT

International application No  
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## A. CLASSIFICATION OF SUBJECT MATTER

INV. C12N1/02 C12N11/14 C12Q1/24 G01N1/40 G01N33/543

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)

C12N C12Q G01N C08K

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 practical, search terms used)

EPO-Internal, WPI Data, FSTA, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 06 081595 B (CENTRAL GLASS CO LTD) 19 October 1994 (1994-10-19) page 3	1-25
X	EP 0 093 027 A (ARGILES & MINERAUX [FR]) 2 November 1983 (1983-11-02) abstract	1-29
X	GB 2 228 477 A (MIZUSAWA INDUSTRIAL CHEM [JP]) 29 August 1990 (1990-08-29) abstract	25-29

 Further documents are listed in the continuation of Box C. See patent family annex.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 6081595	B	19-10-1994	JP 1947109 C	10-07-1995
			JP 3251179 A	08-11-1991
EP 0093027	A	02-11-1983	US 4560660 A	24-12-1985
GB 2228477	A	29-08-1990	BE 1003648 A4	12-05-1992
			CA 2011038 A1	31-08-1990
			DE 4006277 A1	13-09-1990
			FR 2643627 A1	31-08-1990
			IT 1240418 B	15-12-1993
			JP 2069241 C	10-07-1996
			JP 2225314 A	07-09-1990
			JP 6017217 B	09-03-1994
			US 5139760 A	18-08-1992