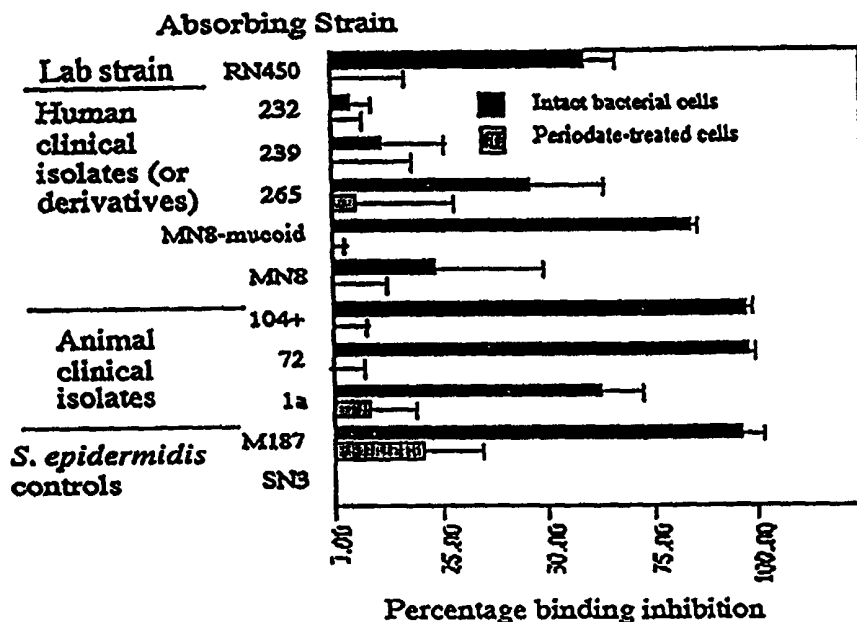




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(71) Applicant: THE BRIGHAM AND WOMEN'S HOSPITAL, INC. [US/US]; 75 Francis Street, Boston, MA 02115 (US).		(88) Date of publication of the international search report: 20 April 2000 (20.04.00)	
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(74) Agent: LOCKHART, Helen, C.; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210 (US).			

(54) Title: POLYSACCHARIDE VACCINE FOR STAPHYLOCOCCAL INFECTIONS



(57) Abstract

The invention relates to compositions of the capsular polysaccharide/adhesin (PS/A) of staphylococci. The PS/A may be isolated or synthesized and includes various modifications to the structure of native PS/A based on the chemical characterization of PS/A. The invention also relates to the use of the PS/A as a vaccine for inducing active immunity to infections caused by *Staphylococcus aureus*, *S. epidermidis*, other related coagulase-negative staphylococci and organisms carrying the *ica* (intracellular adhesin) locus, and to the use of antibodies directed to PS/A for inducing passive immunity to the same class of infections.

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER		
IPC 7	A61K39/085	C07H5/06 C07H11/00 C07H13/12 C08B37/00
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)		
IPC 7 A61K C07H C08B		
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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MACK D ET AL: "The intercellular adhesin involved in biofilm accumulation of Staphylococcus epidermidis is a linear beta-1,6-linked glucosaminoglycan: Purification and structural analysis" JOURNAL OF BACTERIOLOGY, vol. 178, no. 1, January 1996 (1996-01), pages 175-183, XP000867576 the whole document	1,8,11, 19-22, 26,29, 34,38, 41,68, 75,78
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☒ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex.		
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Date of the actual completion of the international search		Date of mailing of the international search report
28 January 2000		14/02/2000
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Stein, A

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/16129

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WESSELS M R ET AL: "Isolation and characterization of type IV group B Streptococcus capsular polysaccharide." INFECTION AND IMMUNITY, (1989 APR) 57 (4) 1089-94. , XP002129163 page 1090, column 1, line 31 - line 56 ---	95
X	LEE J C ET AL: "Chemical characterization and immunogenicity of capsular polysaccharide isolated from mucoid Staphylococcus aureus." INFECTION AND IMMUNITY, (1987 SEP) 55 (9) 2191-7. , XP002129164 the whole document, especially discussion ---	96-98
A	WO 90 03398 A (BRIGHAM & WOMENS HOSPITAL) 5 April 1990 (1990-04-05) cited in the application page 1, line 1 - line 9 page 5, line 30 -page 7, line 5 page 13, line 15 -page 14, line 14 page 17, line 20 -page 18, line 22 page 23, line 4 - line 10 claims 1,2,13-17,24-30 ---	1-98
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A	FATTOM A ET AL: "Effect of conjugation methodology, carrier protein, and adjuvants on the immune response to Staphylococcus aureus capsular polysaccharides" VACCINE,GB,BUTTERWORTH SCIENTIFIC. GUILDFORD, vol. 13, no. 14, 1 October 1995 (1995-10-01), pages 1288-1293, XP004057429 ISSN: 0264-410X the whole document ---	17,18, 32,33, 44,45, 66,67, 84,85
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/16129

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	MCKENNEY D ET AL: "Broadly protective vaccine for Staphylococcus aureus based on an in vivo-expressed antigen." SCIENCE, (1999 MAY 28) 284 (5419) 1523-7. , XP002129165 the whole document	1-98
P,X	MCKENNEY D ET AL: "The ica locus of Staphylococcus epidermidis encodes production of the capsular polysaccharide /adhesin." INFECTION AND IMMUNITY, (1998 OCT) 66 (10) 4711-20. , XP002129166 the whole document	1-98

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/ 16129

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 89-94 are directed to a method of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims: it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/16129

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