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17 August 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HEMOSTATIC DEVICES CONTAINING A PROTEIN PRECIPITATE

(57) Abstract: The present invention is directed to hemostatic devices comprising a substrate, which substrate comprises a precipitate of a protein in an amount effective to provide hemostatic properties to the substrate, or to maintain and/or improve hemostatic properties of the substrate, and to methods of making such devices, wherein the substrate comprising the precipitate of the protein is prepared by precipitation of the protein on or into the substrate upon contacting the protein with the substrate.

WO 2005/016116 A3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/23906

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8): **C07K 1/00**(2006.01),**14/00**(2006.01),**17/00**(2006.01)

USPC: 530/350
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. : 530/350

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,134,229 (SAFERSTEIN et al) 28 July 1992 (28.07.92), column 2, lines 35-45 and 52-57; column 3, lines 14-20; column 6, lines 34-44; column 8, lines 1-5.	1-8
Y	US 4,789,733 (WINKELMAN) 19 December 1988 (19.12.1988), column 3, lines 55-58.	1-8
Y	US 3,649,293 (HOER et al) 14 March 1972 (14.03.1972), column 3, lines 61-65.	1-8

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"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

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
20 April 2006 (20.04.2006)

Date of mailing of the international search report
22 JUN 2006

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/23906

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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:

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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

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 additional fees, this Authority did not invite payment of any additional fees.
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.: 1-8

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 and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-8, drawn to a medical device comprising a substrate, comprising a precipitate of a protein in an amount effective to provide haemostatic properties.

Group II, claim(s) 9-19, drawn to a method for making a medical device comprising a substrate, comprising a precipitate of a protein in an amount effective to provide haemostatic properties.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The technical feature linking Groups I-II appears to be that they all relate to a medical device comprising a protein effective to provide hemostatic properties; however, Coselli et al. (J. Am. Coll. Surg. 2003, Vol. 197, pages 243-252), disclose a medical device comprising a protein effective to provide hemostatic properties.

Therefore the technical feature linking the inventions of Groups I-II does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.

Accordingly, Groups I-II are not so linked by the same or a corresponding special technical feature as to form a single inventive concept.

Continuation of B. FIELDS SEARCHED Item 3:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/23906

US PATENTS, EPO, JPO DERWET, STN BIOSCIENCE CLUSTER: MEDLINE, BIOSIS, CAPLUS.

search terms: meidcal device, substrate, percipitate, protein, fibrinogen, thrombin, fabric, gel, hemostatic properties.