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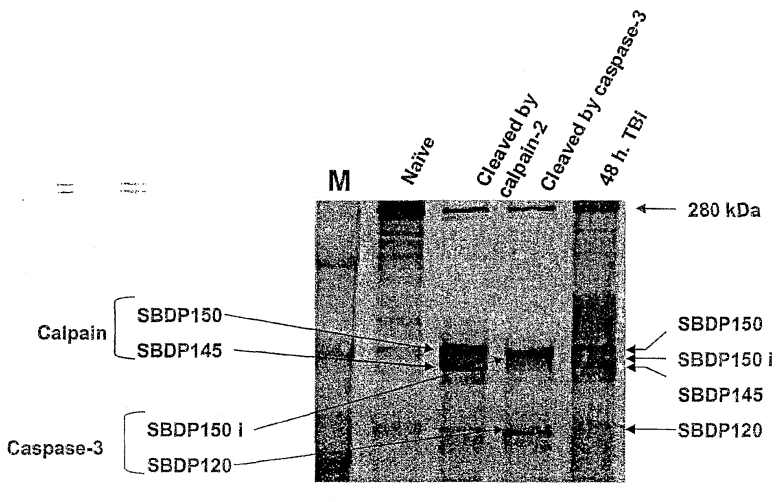
(54) Analyzing nerve cell damage

(57) Methods for detecting a cell damage relating to the discovery that proteases, such as caspase and calpain, are selectively activated in subjects suffering from nervous system damage, such as traumatic brain injury (TBI) compared to samples from healthy subjects. Breakdown products reflecting activation of proteases that degrade spectrin, namely αII-spectrin are produced. A cell injury is detected by providing a biological sample derived from the subject; detecting in the sample the presence of these breakdown products generated by multiple proteases, and correlating the presence of these breakdown products with the presence or type of cell damage.

FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 10 18 5059

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	WO 95/26506 A (CEPHALON, INC) 5 October 1995 (1995-10-05) * claims 1, 6, 8-10, and 13; page 3 lines 2-10; page 4 lines 17-30; page 5 lines 20-28; page 13 lines 10-34; page 18 lines 21-35; page 20 lines 13-16; figures 1-3, 8; examples 1 and 7 * -----	1-15	INV. G01N33/53 G01N33/566 G01N33/567 C12Q1/16 C07K5/00
Y	PIKE BRIAN R ET AL: "Accumulation of non-erythroid alphaII-spectrin and calpain-cleaved alphaII-spectrin breakdown products in cerebrospinal fluid after traumatic brain injury in rats", JOURNAL OF NEUROCHEMISTRY, vol. 78, no. 6, September 2001 (2001-09), pages 1297-1306, XP002394468, ISSN: 0022-3042 figure 1, 2, and 4 page 1298, left-hand column, first paragraph - right-hand column first paragraph page 1303 left-hand column second paragraph - right-hand column first paragraph; * abstract; figures 1-6 * -----	1-15	TECHNICAL FIELDS SEARCHED (IPC) G01N
A	WANG KEVIN K W: "Calpain and caspase: Can you tell the difference?", TRENDS IN NEUROSCIENCES, vol. 23, no. 1, January 2000 (2000-01), pages 20-26, XP002605179, ISSN: 0166-2236 * abstract; figure 1; table 2 * * page 22 * ----- -/--	1-15	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 July 2011	Mulder, Lonneke

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EUROPEAN SEARCH REPORT

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EP 10 18 5059

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	NATH R ET AL: "Non-erythroid alpha-spectrin breakdown by calpain and interleukin 1 beta-converting-enzyme-like protease(s) in apoptotic cells: contributory roles of both protease families in neuronal apoptosis.", THE BIOCHEMICAL JOURNAL. 1 NOV 1996, vol. 319 (Pt 3), 1 November 1996 (1996-11-01), pages 683-690, XP002605180, ISSN: 0264-6021 * abstract; figures 1,2 * * section 'materials and methods' * * section 'characterisation of the SBDPs...in situ' * -----	1-15	
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28-07-2011

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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[标]申请(专利权)人(译)	佛罗里达大学		
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其他公开文献	EP2348317A2 EP2348317B1		
外部链接	Espacenet		

摘要(译)

用于检测与发现蛋白酶（例如半胱天冬酶和钙蛋白酶）在患有神经系统损伤（例如创伤性脑损伤（TBI）的受试者中与来自健康受试者的样品相比被选择性激活的细胞损伤的方法。产生反映降解血影蛋白的蛋白酶活化的分解产物，即αII-血影蛋白。通过提供源自受试者的生物样品来检测细胞损伤;在样品中检测由多种蛋白酶产生的这些分解产物的存在，并将这些分解产物的存在与细胞损伤的存在或类型相关联。

FIG. 3