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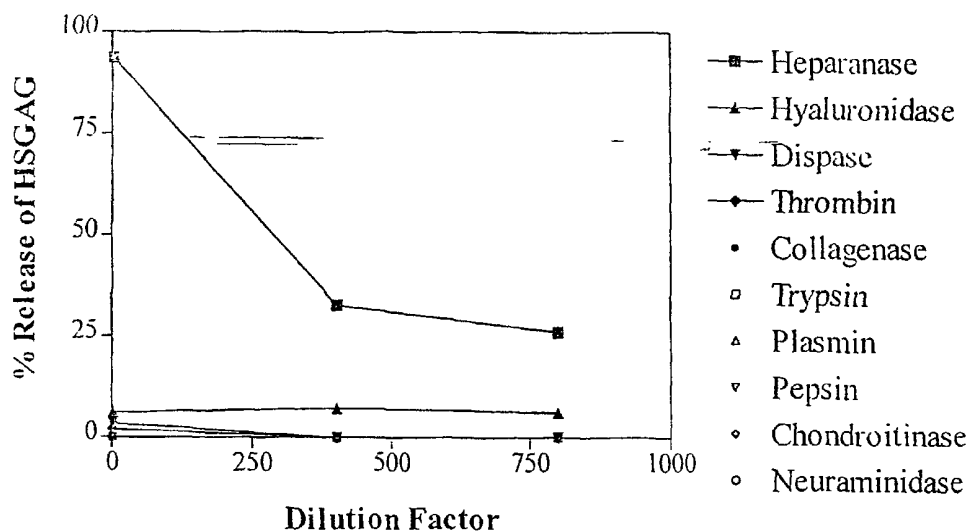
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(54) Title: HEPARANASE ASSAY



(57) Abstract: A method of assaying a sample to determine heparanase activity thereof comprises the steps of (i) incubating the sample in the presence of a first solid phase support having immobilised thereon an HSGAG polymer substrate for the heparanase, the said substrate being insensitive to the action of proteases and the said substrate having bonded thereto a first binding moiety and having further bonded thereto a paracrine cell regulator capable of binding to HSGAG, (ii) treating the incubated sample with a second solid phase support having a second moiety provided thereon capable of immobilising HSGAG polymer substrate cleaved from the first solid phase support on said second solid phase support by binding of said second moiety either with the paracrine cell regulator or with the first binding moiety, (iii) generating a measurable signal the other of the first or second moiety of the cleaved substrate immobilised in the second support solid phase, and (iv) measuring the signal on the second solid phase support separated from the first solid phase support.



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B. FIELDS SEARCHED

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 332 812 A (IRIMURA TATSURO ET AL) 26 July 1994 (1994-07-26) page 10, column 8, line 15 - line 33 page 10, column 8, line 57 -page 11, column 9, line 39 page 11, column 9, line 15 - line 22 page 12, column 11, line 22 - line 62 page 15, column 17, line 18 - line 23 ---	1,2,6-21
Y	WO 94 20512 A (GLYCAN PHARM INC) 15 September 1994 (1994-09-15) page 58, line 32 -page 59, line 3 page 8, line 14 -page 9, line 3 page 11, line 21 - line 34 --- -/--	1,2,6-21

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 795 860 A (HERLIHY JR WALTER C ET AL) 18 August 1998 (1998-08-18) page 36, column 37 -page 37, column 39; claims 1-4,8-11,13 ---	1,11-14, 16-18
A	US 5 185 434 A (GROS PIERRE ET AL) 9 February 1993 (1993-02-09) page 16, column 23, line 41 - line 50 ---	1,3,4
P,A	WO 00 03036 A (AYAL HERSHKOVITZ MATY ;HADASIT MED RES SERVICE (IL); PECKER IRIS () 20 January 2000 (2000-01-20) page 11, line 16 - line 37 page 31, line 3 - line 25 page 35, line 36 -page 36, line 4 -----	1-3,5, 15,16

INTERNATIONAL SEARCH REPORT

information on patent family members

Inter: nal Application No

PCT/GB 00/02117

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5332812 A	26-07-1994	US 4859581 A	22-08-1989
		AU 609386 B	02-05-1991
		AU 6987087 A	17-09-1987
		DK 122087 A	04-12-1987
		EP 0244932 A	11-11-1987
		FI 871039 A	11-09-1987
		FI 924243 A	22-09-1992
		FI 924244 A	22-09-1992
		NO 870977 A	11-09-1987
		NO 930635 A	11-09-1987
		JP 62265998 A	18-11-1987
		US 5262403 A	16-11-1993
		WO 9420512 A	15-09-1994
AU 6353294 A	26-09-1994		
CA 2157388 A,C	15-09-1994		
DE 69418322 D	10-06-1999		
EP 0688327 A	27-12-1995		
EP 0900804 A	10-03-1999		
US 5795860 A	18-08-1998		
US 5795860 A	18-08-1998	AT 179712 T	15-05-1999
		AU 6353294 A	26-09-1994
		CA 2157388 A,C	15-09-1994
		DE 69418322 D	10-06-1999
		EP 0688327 A	27-12-1995
		EP 0900804 A	10-03-1999
		WO 9420512 A	15-09-1994
US 5185434 A	09-02-1993	FR 2577135 A	14-08-1986
		AT 75487 T	15-05-1992
		AU 591077 B	30-11-1989
		AU 5078385 A	14-08-1986
		CA 1264667 A	23-01-1990
		DE 3585951 A	04-06-1992
		DK 563585 A	14-08-1986
		EP 0192002 A	27-08-1986
		GR 852914 A	07-04-1986
		IE 59909 B	20-04-1994
		JP 7025701 B	22-03-1995
		JP 61200925 A	05-09-1986
		KR 9303333 B	26-04-1993
		NZ 214482 A	29-08-1989
		PT 81623 A,B	01-01-1986
ZA 8509299 A	27-08-1986		
WO 0003036 A	20-01-2000	AU 4869799 A	01-02-2000