(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 2 August 2001 (02.08.2001)

PCT

(10) International Publication Number WO 01/55314 A3

(51)	International Pat	ent Classification ⁷ : C07H 21	1/02,	60/225,214	14 August 2000 (14.08.2000)	US
` /		C12P 21/06, C07K 2/00, A61K 30)/00,	60/226,279	18 August 2000 (18.08.2000)	US
	38/00			60/226,868	22 August 2000 (22.08.2000)	US
				60/227,182	22 August 2000 (22.08.2000)	US
(21)	International App	plication Number: PCT/US01/0	1324	60/226,681	22 August 2000 (22.08.2000)	US
			60/227.009		23 August 2000 (23.08.2000)	
(22)	International Fili	ng Date: 17 January 2001 (17.01.2	2001)	60/228,924	30 August 2000 (30.08.2000)	US
(3.5)	T211 1	Γ	-11-1-	60/229.344	1 September 2000 (01.09.2000)	US
(25)	Filing Language:	EII	glish	60/229,343	1 September 2000 (01.09.2000)	US
(26)	Publication Lang	nage: En	glish	60/229,287	1 September 2000 (01.09.2000)	US
(20)	Tublication Lang	uuge.	511511	60/229,345	1 September 2000 (01.09.2000)	US
(30)	Priority Data:			60/229,513	5 September 2000 (05.09.2000)	US
` ′	60/179,065	31 January 2000 (31.01.2000)	US	60/229,509	5 September 2000 (05.09.2000)	US
	60/180,628	4 February 2000 (04.02.2000)	US	60/230,438	6 September 2000 (06.09.2000)	US
	60/184,664	24 February 2000 (24.02.2000)	US	60/230,437	6 September 2000 (06.09.2000)	US
	60/186,350	2 March 2000 (02.03,2000)	US	60/231,413	8 September 2000 (08.09.2000)	US
	60/189,874	16 March 2000 (16.03.2000)	US	60/232,080	8 September 2000 (08.09.2000)	US
	60/190.076	17 March 2000 (17.03.2000)	US	60/231,414	8 September 2000 (08.09.2000)	US
	60/198.123	18 April 2000 (18.04.2000)	US	60/231,244	8 September 2000 (08.09.2000)	US
	60/205,515	19 May 2000 (19.05.2000)	US	60/232,081	8 September 2000 (08.09.2000)	US
	60/209,467	7 June 2000 (07.06.2000)	US	60/231,242	8 September 2000 (08.09.2000)	US
=	60/214,886	28 June 2000 (28.06.2000)	US	60/231,243	8 September 2000 (08.09.2000)	US
	60/215,135	30 June 2000 (30.06.2000)	US	60/231,968	12 September 2000 (12.09.2000)	US
	60/216,647	7 July 2000 (07.07.2000)	US	60/232,401	14 September 2000 (14.09.2000)	US
	60/216,880	7 July 2000 (07.07.2000)	US	60/232,399	14 September 2000 (14.09.2000)	US
=	60/217,487	11 July 2000 (11.07.2000)	US	60/232,400	14 September 2000 (14.09.2000)	US
	60/217,496	11 July 2000 (11.07.2000)	US	60/232,397	14 September 2000 (14.09.2000)	US
	60/218,290	14 July 2000 (14.07.2000)	US	60/233,063	14 September 2000 (14.09.2000)	US
	60/220,963	26 July 2000 (26.07.2000)	US	60/233,064	14 September 2000 (14.09.2000)	US
	60/220,964	26 July 2000 (26.07.2000)	US	60/233,065	14 September 2000 (14.09.2000)	US
	60/225,757	14 August 2000 (14.08.2000)	US	60/232,398	14 September 2000 (14.09.2000)	US
	60/225,270	14 August 2000 (14.08.2000)	US	60/234,223	21 September 2000 (21.09.2000)	US
▤	60/225,447	14 August 2000 (14.08.2000)	US	60/234,274	21 September 2000 (21.09.2000)	US
	60/225,267	14 August 2000 (14.08.2000)	US	60/234,997	25 September 2000 (25.09.2000)	US
	60/225,758	14 August 2000 (14.08.2000)	US	60/234,998	25 September 2000 (25.09.2000)	US
	60/225,268	14 August 2000 (14.08.2000)	US	60/235,484	26 September 2000 (26.09.2000)	US
	60/224,518	14 August 2000 (14.08.2000)	US	60/235,834	27 September 2000 (27.09.2000)	US
	60/224,519	14 August 2000 (14.08.2000)	US	60/235,836	27 September 2000 (27.09.2000)	US
	60/225,759	14 August 2000 (14.08.2000)	US	60/236,369	29 September 2000 (29.09.2000)	US
	60/225,213	14 August 2000 (14.08.2000)	US	60/236,327	29 September 2000 (29.09.2000)	US
	60/225.266	14 August 2000 (14.08.2000)	US	60/236,370	29 September 2000 (29.09.2000)	US
_						

[Continued on next page]

(54) Title: DIGESTIVE SYSTEM RELATED NUCLEIC ACIDS, PROTEINS AND ANTIBODIES

(57) Abstract: The present invention relates to novel digestive system related polynucleotides and the polypeptides encoded by these polynucleotides herein collectively known as "digestive system antigens", and the use of such digestive system antigens for detecting disorders of the digestive system, particularly the presence of cancer and cancer metastases. More specifically, isolated digestive system associated nucleic acid molecules are provided encoding novel digestive system associated polypeptides. Novel digestive system polypeptides and antibodies that bind to these polypeptides are provided. Also provided are vectors, host cells, and recombinant and synthetic methods for producing human digestive system associated polynucleotides and/or polypeptides. The invention further relates to diagnostic and therapeutic methods useful for diagnosing, treating, preventing and/or prognosing disorders related to the digestive system, including cancer, and therapeutic methods for treating such disorders. The invention further relates to screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further relates to methods and/or compositions for inhibiting the production and function of the polypeptides of the present invention.



60/236,368	29 September 2000 (29.09.2000)	US
60/236,367	29 September 2000 (29.09.2000)	US
60/237,039	2 October 2000 (02.10.2000)	US
60/237,038	2 October 2000 (02.10.2000)	US
60/237,040	2 October 2000 (02.10.2000)	US
60/237,037	2 October 2000 (02.10.2000)	US
60/236,802	2 October 2000 (02.10.2000)	US
60/239,937	13 October 2000 (13.10.2000)	US
60/239,935	13 October 2000 (13.10.2000)	US
60/241,785	20 October 2000 (20.10.2000)	US
60/241,809	20 October 2000 (20.10.2000)	US
60/240,960	20 October 2000 (20.10.2000)	US
60/241.787	20 October 2000 (20.10.2000)	US
60/241,808	20 October 2000 (20.10.2000)	US
60/241,221	20 October 2000 (20.10.2000)	US
60/241,786	20 October 2000 (20.10.2000)	US
60/241,826	20 October 2000 (20.10.2000)	US
60/244,617	1 November 2000 (01.11.2000)	US
60/246,474	8 November 2000 (08.11.2000)	US
60/246,532	8 November 2000 (08.11.2000)	US
60/246,476	8 November 2000 (08.11.2000)	US
60/246,526	8 November 2000 (08.11.2000)	US
60/246,527	8 November 2000 (08.11.2000)	US
60/246,475	8 November 2000 (08.11.2000)	US
60/246,525	8 November 2000 (08.11.2000)	US
60/246,477	8 November 2000 (08.11.2000)	US
60/246,528	8 November 2000 (08.11.2000) 8 November 2000 (08.11.2000)	US
60/246,611	8 November 2000 (08.11.2000)	US
60/246,610	8 November 2000 (08.11.2000)	US
	8 November 2000 (08.11.2000)	US
60/246,613	8 November 2000 (08.11.2000)	US
60/246,609 60/246,478	8 November 2000 (08.11.2000)	US
60/246,524	8 November 2000 (08.11.2000)	US
	8 November 2000 (08.11.2000)	US
60/246,523 60/249,299	17 November 2000 (17.11.2000)	US
	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,210		US
60/249,216	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,217	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,211	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,215	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,218 60/249,208	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,213	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,213	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,207 60/249,245	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
	17 November 2000 (17.11.2000) 17 November 2000 (17.11.2000)	US
60/249,244		US
60/249,297	17 November 2000 (17.11.2000)	US
60/249,214	17 November 2000 (17.11.2000)	US
60/249,264	17 November 2000 (17.11.2000)	
60/249,209	17 November 2000 (17.11.2000)	US US
60/249,300	17 November 2000 (17.11.2000)	
60/249,265	17 November 2000 (17.11.2000)	US
60/250,391	1 December 2000 (01.12.2000)	US
60/250,160	1 December 2000 (01.12.2000)	US
60/256,719	5 December 2000 (05.12.2000)	US
60/251,030	5 December 2000 (05.12.2000)	US
60/251,988	5 December 2000 (05.12.2000)	US
60/251,479	6 December 2000 (06.12.2000)	US

CO 10 5 1 0 CO	0.00 1 2000 (00.12.2000)	110
60/251,869	8 December 2000 (08.12.2000)	US
60/251,856	8 December 2000 (08.12.2000)	US
60/251,868	8 December 2000 (08.12.2000)	US
60/251,990	8 December 2000 (08.12.2000)	US
60/251,989	8 December 2000 (08.12.2000)	US
60/254,097	11 December 2000 (11.12.2000)	US
60/259,678	5 January 2001 (05.01.2001)	US

(71) Applicant (for all designated States except US): HUMAN GENOME SCIENCES, INC. [US/US]; 9410 Key West Avenue, Rockville, MD 20850 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): ROSEN, Craig, A. [US/US]; 22400 Rolling Hill Lane, Laytonsville, MD 20882 (US). BARASH, Steven, C. [US/US]; 111 Watkins Pond Blvd., #301, Rockville, MD 20850 (US). RUBEN, Steven, M. [US/US]; 18528 Heritage Hills Drive, Olney, MD 20832 (US).
- (74) Agents: HOOVER, Kenley, K. et al.; Human Genome Sciences, Inc., 9410 Key West Avenue, Rockville, MD 20850 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- with sequence listing part of description published separately in electronic form and available upon request from the International Bureau
- (88) Date of publication of the international search report: 2 May 2002

(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 36/2001 of 7 September 2001, Section II

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/01324

IPC(7)	SSIFICATION OF SUBJECT MATTER C07H 21/02, 21/04; C12Q 1/68; C12P 21/06;				
US CL	536/23.1, 24.1; 435/6, 7.1, 69.1, 320.1, 440; International Patent Classification (IPC) or to both				
	DS SEARCHED	national classif	reaction and it		
	cumentation searched (classification system followed 36/23.1, 24.1; 435/6, 7.1, 69.1, 320.1, 440; 530/30				
Documentati	on searched other than minimum documentation to th	ne extent that s	uch documents are included	in the fields searched	
EAST, Derw	ata base consulted during the international search (na ent, Medline, GENBANK, (other DNA and protein		e and, where practicable, se	earch terms used)	
	UMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where a			Relevant to claim No.	
X	Database GENBANK on NCBI, Accession No. AB		1, 2, 5, 7-10		
Y	Purification and characterization of a lysophosphat January 2000. Biochem J. 1998, Vol. 336, (Pt. 2), 87% identical to SEQ ID NO:11, 97% from nt61-n	pages 483-489		3, 4, 6, 17, 18, 22	
X	Database GENBANK on NCBI, Accession No. AA and analysis of 280,000 human expressed sequence 1996, Vol. 6, No. 9, pages 807-828, see entire rec	1, 7-10			
x	97% from nt1-nt542. Database SWISSPROT on NCBI, Accession No. P.	4090. BARRE	LL et al. Direct	11	
	Submission. 01 November 1997. See entire record.				
Y	80% from aa21-aa31.			12-16, 19-21, 23-24	
Further	documents are listed in the continuation of Box C.	See	patent family annex.		
• S ₁	pecial categories of cited documents:		r document published after the inter-		
	defining the general state of the art which is not considered to be lar relevance	prù	e and not in conflict with the applica sciple or theory underlying the inven	uion.	
	plication or patent published on or after the international filing date	con	ument of particular relevance; the c sidered novel or cannot be considered in the document is taken alone	ed to involve an inventive step	
"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)		con	considered to involve an inventive step when the document is combined with one or more other such documents, such combination		
"O" document	referring to an oral disclosure, use, exhibition or other means	ben	ng obvious to a person skilled in the	art	
	published prior to the international filing date but later than the ste claimed	"&" doc	ument member of the same patent fa	amily	
	ctual completion of the international search	Date of maili	ng of the international search 02 AUG 2001		
Name and ma	illing address of the ISA/US	Authorized o	cr.		
Commu Box	missioner of Patents and Trademarks	Marv K. Zei	nan PARALEGAL	SPECIALIST	
	ingron, D.C. 20231 . (703)305-3230	Telephone N	o. (703)30 TECHNOLOGY	CENTER 1600	

INTERNATIC .. AL SEARCH REPORT

Interna al application No.

PCT/US01/01324

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)				
This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:				
1. Claim Nos.: because they relate to subject matter not required to be searched by this Authority, namely:				
2. Claim 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. Claim 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: 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 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.: 1-24 in- part, SEQ ID NO:11 and 1274				
Remark on Protest				
No protest accompanied the payment of additional search fees.				

Form PCT/ISA/210 (continuation of first sheet(1)) (July 1998)

INTERNATIONAL SEARCH I	REPORT	Ĺ
------------------------	--------	---

International apartion No.

PCT/US01/01324

BOX II. 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) 1-24-in-part, drawn to Inventions using SEQ: 11 (nucleic acid) and the encoded sequence SEQ ID NO: 1274

(polypeptides).

Group II, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 12 (nucleic acid) and the encoded polypeptide SEQ: 1275. Group III, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 13 (nucleic acid) and the encoded polypeptide SEQ: 1276. Group IV, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 14(nucleic acid) and the encoded sequence SEQ ID NO: 1277 (polypeptides).

Group V, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 15 (nucleic acid) and the encoded polypeptide SEQ: 1278. Group VI, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 16 (nucleic acid) and the encoded polypeptide SEQ: 1279. Group VII, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 17 (nucleic acid) and the encoded sequence SEQ ID NO: 1280 (polypeptides).

Group VIII, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 18 (nucleic acid) and the encoded polypeptide SEQ: 1281. Group IX, claim(s) 1-24-in-part, drawn to Inventions using SEQ: 19 (nucleic acid) and the encoded polypeptide SEQ: 1282. Groups X- Group 1248, claim(s) 1-24-in-part, drawn to each of SEQ: 20-1259, and each encoded polypeptide of 1283-2519. The inventions listed as Groups 1-1248 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: each separate polynucleotide is a distinct invention, separable from all other polynucleotides. Each polynucleotide encodes differing polypeptides, having differing sequences and structures. Knowledge of one sequence does not shed light on any other sequence. The polynucleotides are not linked by any shared feature, structure or function. Therefore, the application lacks a shared special technical feature.