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(12)

(KR)  
(A)

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(43)

2003 - 0004037  
2003 01 14

(21) 10 - 2002 - 0035757  
(22) 2002 06 25

(30) 60/300,991 2001 06 26 (US)

(71) - 6 109 3

(72) .  
- - 22065  
- - 1 16123 - 3 2  
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- 6 109 3

(74)

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가 , 가  
가 , ,  
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1 4

(a)

(b)

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가

( , Wewer et al.(1986) Proc. Natl. Acad. Sci. USA 83: 7137 - 7141; Albelda et al.(1990) Cancer Res. 50:6757 - 6764; Powell et al.(1993) Cancer Res. 53:417 - 422; Sreenath et al.(1992) Cancer Res. 52:4942 - 4947; Birch et al.(1991) Cancer Res. 51:6660 - 6667; Harn et al.(1996) J. Clin. Gastroenterol. 22:107 - 110; Uleminckx et al.(1991) Cell 66:107 - 119; Liotta et al.(1991) Cell 64:327 - 336; Goldberg et al.(1989) Proc. Natl. Acad. Sci. USA 86: 8207 - 8211; and Koderer et al.(1994) Cancer 73:259 - 265.)

(calcyclin) AXL ( , Weterman et al.(1992) Cancer Res. 52:1291 - 1296; Jacob et al.(1999) Cancer Detect. Prev. 23:325 - 332). - , MMP - 19 , (interstitial) , - 3 - 6 ( , Kanamori et al.(1999) Cancer Res. 59 :4225 - 4227; Okada et al.(1994) Clin. Exp. Metastas. 12:305 - 314; Morini et al.(2000) Int. J. Cancer, 87 :336 - 342; Friedrichs et al.(1995) Cancer Res. 55:901 - 906). L6 ( , Marken et al.(1992) Proc. Natl. Acad. Sci. USA 89:3503 - 3507).

4 ( I, II, III, IV)

" I" I , " II" II , " III" III , " IV" IV

V ) , . " I, II, III, IV " " I, II, III, IV " ( I, II, III, IV ) .

가 1 (reference expression value) 가

:(1) ; (2) ; (3) ; (4) 가 (neoplastic disorder), (abundance) (Northern) expression:SAGE), (microarray) 가가 mRNA; (2) PCR, (antibody array) (quantitative mass spectroscopy)

I, II, III 10%, 20%, 30%, 50%, 75%, 80%, 90%, 99%

가 2 I, II, III, / IV ;

" (expression profile)" , (splice - variant) (allelic - variant), (1) mRNA; (2) 가 I, II, III, IV 2

I II 50%, 60%, 80% 90% II (20%, 40%, 50%, 60%, 80%, 90%)

III, / IV 90% ( I, II, III, / IV (100%), I, II, 20%, 40%, 50%, 60%, 80%, ; )

PCR / SAGE

; (2) ; (1) ; (3)

; (4) 가 ( , )

( , ) (difference profile)

(cluster)

(array) (address) (subs

trate) (capture probe) ( , )

가 2 3 ( , )

I, II, III, / IV ( , 100%),

I, II, III, / IV , I, II, III, / IV 20%, 40%, 50%, 6

0%, 80%, 90%

I, II, III, / IV ( ,

100%), I, II, III, / IV ( ,

20%, 40%, 50%, 60%, 80%, 90%

10, 50, 100, 200, 500,  $10^3$ ,  $10^4$ ,  $10^5$ ,  $10^6$ ,  $10^7$ ,  $10^8$ ,  $10^9$   $cm^2$

가

I, II, III, / IV

2, 5, 10, 20, 30, 50

III, / IV , 5% (mismatch)

가 , 가 ,

( , )

; ;

( , I, II, III, / IV );

V I, II, III, / IV , I, II, III, / I

IV ( , 100%), I, II, III, / IV , I, II, III, /

20%, 40%, 50%, 60%, 80%, 90% (multiple values)

( , )

가

(Human lung adenocarcinom

a cell line) CL<sub>1-0</sub> ( , CL<sub>1-1</sub> CL<sub>1-5</sub> )

가  
( , 5%, 10%, 15%, 20%, 40%, 50%, 60%,  
70%, 80%, 90%)  
, SAGE  
PCR

가 , (1)  
; (2)

( , )

I, II, III, / IV ( , I, II, III, / IV ( , 100%),  
I, II, III, / IV ( , I, II, III, / IV 20%, 40%, 50%, 60%, 80  
, 90%)  
2  
, CL<sub>1-0</sub> ( , CL<sub>1-1</sub> CL<sub>1-5</sub> )

( , )

,가

(agent)

, SAGE

PCR

/

( , CL<sub>1-0</sub>

( , CL<sub>1-1</sub> CL<sub>1-5</sub> )

가 (transactional method of evaluating a subject)  
(1) (caregiver) ; (2) ; (3)

(4)

; (5)

가

: (1)

; (2) ( , , )

; (3)

; (4) 가

( ,

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I, II, III, / IV ( , I, II, III, / IV ( , 10  
0%), I, II, III, / IV , I, II, III, / IV 20%,  
40%, 50%, 60%, 80%, 90%)

가 (descriptor); 가 ; 가  
 ( , 가 ) , . /

가 (metric) (Euclidean distance)가  
 (difference vector) ( ,

(medium)가 (access) ; (1) : 가 (computer - readable instruction) ; 가 ; (2)

I, II, III, / IV ( , 100%), I, II, III, / IV  
 ( , I, II, III, / IV 20%, 40%, 50%, 60%, 80%, 90%)

I user interface) / (subset) (graphica  
 (medium) , ,

I, III, / IV (descriptor)  
 I, II, III, / IV ( , 100%), I, II, III, / IV ( , I, II, III, / IV  
 20%, 40%, 50%, 60%, 80%, 90%)  
 ( , ), ( , ), ( , )

[ 1 ] ( 1 )

유니진 클러스터	화상 ID	진뱅크 수납번호	예상 유전자(putative gene)
Hs.75878	23633	R39603	early development regulator 2 (homolog of polyhomeotic 2)
Hs.81071	229703	H66472	extracellular matrix protein 1
Hs.89563	148578	H12586	nuclear cap binding protein 1, 80kD
Hs.202949	24829	R38857	KIAA1102 protein
Hs.635	300048	N78918	calcium channel, voltage-dependent, beta 1 subunit
Hs.79274	344912	W72244	annexin A5
Hs.263435	345832	W72690	histidine ammonia-lyase
Hs.278593	530715	AA069915	interleukin 18 binding protein
Hs.19131	307932	N93047	transcription factor Dp-2 (E2F dimerization partner 2)
Hs.8117	108245	T69807	erbB2-interacting protein ERBIN
Hs.1501	114116	T79471	syndecan 2 (heparan sulfate proteoglycan 1, cell surface-associated, fibroglycan)
Hs.103042	174835	H30016	microtubule-associated protein 1B
Hs.77313	310428	N98775	cyclin-dependent kinase (CDC2-like) 10
Hs.23617	44582	H07076	hypothetical protein FLJ20531
Hs.153	549076	AA083222	ribosomal protein L7
Hs.8123	322820	W15314	chromobox homolog 3 (Drosophila HP1 gamma)
Hs.75716	323255	W42998	plasminogen activator inhibitor, type II (arginine-serpin)
Hs.77326	323605	W44341	insulin-like growth factor binding protein 3
Hs.75621	200421	R97243	protease inhibitor 1 (anti-elastase), alpha-1-antitrypsin
Hs.99910	202674	H53527	phosphofructokinase, platelet
Hs.24340	131368	R23188	centaurin beta2
Hs.1770	203816	H56135	ligase I, DNA, ATP-dependent
Hs.150423	324698	W47128	cyclin-dependent kinase 9 (CDC2-related kinase)
Hs.145956	429284	AA007349	zinc finger protein 226
Hs.265829	44280	H06518	integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)
Hs.3068	38359	R49463	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 3
Hs.103106	340731	W56305	Homo sapiens mRNA for G7b protein (G7b gene, located in the class III region of the major histocompatibility complex)
Hs.83341	49318	H15718	AXL receptor tyrosine kinase
Hs.51147	221208	H91843	guanine nucleotide binding protein (G protein), alpha transducing activity polypeptide 1
Hs.74579	52262	H22893	KIAA0263 gene product

Hs.250687	294499	N69526	transient receptor potential channel 1
Hs.202379	471256	AA034479	meiotic recombination (S. cerevisiae) 11 homolog B
Hs.86386	21555	T65116	myeloid cell leukemia sequence 1 (BCL2-related)
Hs.20991	25755	R37131	SET domain, bifurcated, 1
Hs.85302	67051	T70335	adenosine deaminase, RNA-specific, B1 (homolog of rat RED1)
Hs.78473	308063	N95309	N-deacetylase/N-sulfotransferase (heparan glucosaminyl) 2
Hs.102	346840	W79815	aminomethyltransferase (glycine cleavage system protein T)
Hs.75516	109211	T81117	tyrosine kinase 2
Hs.73769	308366	N93766	folate receptor 1 (adult)
Hs.14376	110760	T90619	actin, gamma 1
Hs.15154	110740	T90558	sushi-repeat-containing protein, X chromosome
Hs.83727	309032	N92864	cleavage and polyadenylation specific factor 1, 160kD subunit
Hs.69771	544635	AA075297	B-factor, properdin
Hs.12163	544672	AA074799	eukaryotic translation initiation factor 2, subunit 2 (beta, 38kD)
Hs.211539	166201	R87490	eukaryotic translation initiation factor 2, subunit 3 (gamma, 52kD)
Hs.80315	179283	H50251	SH3-domain GRB2-like 3
Hs.17704	120850	T95879	PERB11 family member in MHC class I region
Hs.63489	365849	AA025527	protein tyrosine phosphatase, non-receptor type 6
Hs.80776	192966	H41410	phospholipase C, delta 1
Hs.180842	323468	W45605	ribosomal protein L13
Hs.21022	47510	H11603	adaptor-related protein complex 3, beta 2 subunit
Hs.270845	50080	H17934	kinesin-like 5 (mitotic kinesin-like protein 1)
Hs.78902	52494	H23010	voltage-dependent anion channel 2
Hs.85296	484874	AA037229	Integrin beta 3 {alternatively spliced, clone beta 3C} [human, erythroleukemia cell HEL, mRNA Partial, 409 nt]
Hs.75535	300051	N78927	myosin, light polypeptide 2, regulatory, cardiac, slow
Hs.80680	485005	AA037708	major vault protein
Hs.82071	343685	W69165	Chp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2
Hs.78465	40991	R56065	v-jun avian sarcoma virus 17 oncogene homolog
Hs.99914	347097	W79487	ribosomal protein L22
Hs.73818	489338	AA058525	ubiquinol-cytochrome c reductase hinge protein



Hs.79889	44722	H06712	monocyte to macrophage differentiation-associated
Hs.92198	257128	N26830	calcium-regulated heat-stable protein (24kD)
Hs.179898	321445	W32294	HSPC055 protein
Hs.18268	46408	H09257	adenylate kinase 5
Hs.114346	567001	AA152406	cytochrome c oxidase subunit VIIa polypeptide 1 (muscle)
Hs.155342	47306	H11054	protein kinase C, delta
Hs.2961	377441	AA055242	S100 calcium-binding protein A3
Hs.7994	33398	R44070	hypothetical protein FLJ20551
Hs.180069	591311	AA159002	nuclear respiratory factor 1
Hs.76753	47648	H16257	endoglin (Osler-Rendu-Weber syndrome 1)
Hs.279607	592815	AA158262	calpastatin
Hs.182979	323915	W46302	ribosomal protein L12
Hs.118442	595244	AA164211	cyclin C
Hs.75139	49363	H16576	partner of RAC1 (arfaptin 2)
Hs.76240	324895	W49669	adenylate kinase 1
Hs.74578	416266	W86149	DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 9 (RNA helicase A, nuclear DNA helicase II; leukophysin)
Hs.259776	416764	W86580	Human 3-hydroxyacyl-CoA dehydrogenase, isoform 2 mRNA, complete cds
Hs.14331	327145	W02662	S100 calcium-binding protein A13
Hs.181289	328416	W38424	elastase 3, pancreatic (protease E)
Hs.173554	341640	W58185	ubiquinol-cytochrome c reductase core protein II
Hs.267819	223243	H85614	protein phosphatase 1, regulatory (inhibitor) subunit 2
Hs.83765	52414	H24390	dihydrofolate reductase
Hs.173205	25760	R37231	nucleophosmin (nucleolar phosphoprotein B23, numatrin)
Hs.2730	306373	N90702	heterogeneous nuclear ribonucleoprotein L
Hs.183994	307127	N91788	protein phosphatase 1, catalytic subunit, alpha isoform
Hs.50889	307055	N89677	(clone PWHLC2-24) myosin light chain 2
Hs.211973	109285	T80836	homolog of Yeast RRP4 (ribosomal RNA processing 4), 3'-5'-exoribonuclease
Hs.184776	243274	H94695	ribosomal protein L23a
Hs.2175	246180	N55510	colony stimulating factor 3 receptor (granulocyte)
Hs.180946	544885	AA075385	ribosomal protein L5
Hs.32952	323834	W46372	keratin, hair, basic, 1
Hs.157777	202915	H54091	Homo sapiens mRNA; cDNA DKFZp434G0118 (from clone DKFZp434G0118)
Hs.80288	35091	R43793	heat shock 70kD protein-like 1
Hs.132243	278624	N66195	aminopeptidase puromycin sensitive

Hs.75607	470841	AA031774	myristoylated alanine-rich protein kinase C substrate (MARCKS, 80K-L)
Hs.99858	233358	H79784	ribosomal protein L7a
Hs.82163	26094	R37282	monoamine oxidase B
Hs.82128	155195	R70262	5T4 oncofetal trophoblast glycoprotein
Hs.146550	42511	R60961	myosin, heavy polypeptide 9, non-muscle
Hs.75334	27524	R39966	exostoses (multiple) 2
Hs.85087	166004	R87406	latent transforming growth factor beta binding protein 4
Hs.198443	43783	H05672	inositol 1,4,5-triphosphate receptor, type 1
Hs.64639	310347	N98760	glioma pathogenesis-related protein
Hs.243987	124194	R01769	GATA-binding protein 4
Hs.6980	322522	W15247	aldo-keto reductase family 7, member A2 (aflatoxin aldehyde reductase)
Hs.167531	195423	R89611	Homo sapiens mRNA full length insert cDNA clone EUROIMAGE 195423
Hs.5855	46889	H10154	Homo sapiens mRNA; cDNA DKFZp434D0818 (from clone DKFZp434D0818)
Hs.418	323181	W42634	fibroblast activation protein, alpha; seprase
Hs.182418	33899	R44535	endonuclease G
Hs.150555	593061	AA158728	protein predicted by clone 23733
Hs.180577	133172	R26450	granulin
Hs.286	272457	N35801	ribosomal protein L4
Hs.75428	275935	R93344	superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))
Hs.223241	50603	H17646	eukaryotic translation elongation factor 1 delta (guanine nucleotide exchange protein)
Hs.95011	428054	AA002062	syntrophin, beta 1 (dystrophin-associated protein A1, 59kD, basic component 1)
Hs.75772	38329	R49540	nuclear receptor subfamily 3, group C, member 1
Hs.242463	510899	AA099945	keratin 8
Hs.27747	52375	H22978	G protein-coupled receptor 37 (endothelin receptor type B-like)
Hs.65424	297795	N69950	tetranectin (plasminogen-binding protein)
Hs.82906	129381	R11676	cell division cycle 20, S.cerevisiae homolog
Hs.23119	485665	AA041521	ITBA1 gene
Hs.85570	344436	W73253	hypothetical protein similar to beta-transducin family
Hs.44499	344704	W73034	small EDRK-rich factor 2
Hs.274416	306510	N91803	NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 6 (14kD, B14)
Hs.78547	345201	W72342	Human mRNA for zinc finger protein (clone 647)
Hs.151706	154045	R48810	KIAA0134 gene product
Hs.7644	346040	W72152	H1 histone family, member 2
Hs.9242	346109	W72744	purine-rich element binding protein B

Hs.1076	346130	W72751	small proline-rich protein 1B (cornifin)
Hs.46405	346780	W78101	polymerase (RNA) II (DNA directed) polypeptide F
Hs.197728	155738	R72084	carboxylesterase 2 (intestine, liver)
Hs.84318	308501	N95782	replication protein A1 (70kD)
Hs.99969	347175	W80463	fusion, derived from t(12;16) malignant liposarcoma
Hs.170027	243603	N49725	mouse double minute 2, human homolog of; p53-binding protein
Hs.78888	308755	N95211	diazepam binding inhibitor (GABA receptor modulator, acyl-Coenzyme A binding protein)
Hs.258730	246201	N55530	heme-regulated initiation factor 2-alpha kinase
Hs.180946	544915	AA075496	ribosomal protein L5
Hs.88411	113635	T79220	DNA segment on chromosome 6 (unique) 49 expressed sequence
Hs.3281	172857	H20073	neuronal pentraxin II
Hs.256697	174619	H27885	histidine triad nucleotide-binding protein
Hs.13456	310457	N99978	Homo sapiens clone 24747 mRNA sequence
Hs.15196	510032	AA053393	putative receptor protein
Hs.7736	31276	R42876	hypothetical protein
Hs.100724	510275	AA053166	peroxisome proliferative activated receptor, gamma
Hs.16059	366695	AA029690	HSPC009 protein
Hs.81469	376052	AA039353	nucleotide binding protein 1 (E.coli MinD like)
Hs.80684	267145	N23950	high-mobility group (nonhistone chromosomal) protein 2
Hs.118786	86004	T62812	metallothionein 2A
Hs.82251	469748	AA028056	myosin 1C
Hs.65114	511604	AA115797	keratin 18
Hs.8383	222735	H86444	bromodomain adjacent to zinc finger domain, 2B
Hs.11638	526088	AA076383	FACL5 for fatty acid coenzyme A ligase 5
Hs.50130	343578	W69632	necdin (mouse) homolog
Hs.2083	485849	AA040427	CDC-like kinase 1
Hs.180532	26483	R39784	heat shock 90kD protein 1, alpha
Hs.75323	42313	R60946	prohibitin
Hs.50640	306873	N91935	JAK binding protein
Hs.77031	43297	H05065	Sp2 transcription factor
Hs.64593	309391	N94313	ATP synthase, H+ transporting, mitochondrial F1F0, subunit d
Hs.135281	43567	H05938	alpha-actinin-2-associated LIM protein
Hs.1239	309853	N94637	alanyl (membrane) aminopeptidase (aminopeptidase N, aminopeptidase M, microsomal aminopeptidase, CD13, p150)
Hs.79069	21505	T65541	cyclin G2

Hs.169449	30209	R16311	protein kinase C, alpha
Hs.77628	31155	R42594	steroidogenic acute regulatory protein related
Hs.7644	257094	N30791	H1 histone family, member 2
Hs.3254	259977	N32606	ribosomal protein L23-like
Hs.82767	563608	AA100423	sperm specific antigen 2
Hs.65114	563957	AA101381	keratin 18
Hs.118893	563884	AA101407	p53-responsive gene 2
Hs.77221	46367	H09959	choline kinase
Hs.156346	46597	H09978	topoisomerase (DNA) II alpha (170kD)
Hs.274364	712871	AA281981	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 3
Hs.42484	567179	AA148598	hypothetical protein FLJ10618
Hs.172665	47384	H10779	methylenetetrahydrofolate dehydrogenase (NADP+ dependent), methenyltetrahydrofolate cyclohydrolase, formyltetrahydrofolate s
Hs.35384	198546	R94868	ring finger protein 1
Hs.180655	205953	H58497	serine/threonine kinase 12
Hs.83173	327182	W02748	cyclin D3
Hs.75199	37209	R50927	protein phosphatase 2, regulatory subunit B (B56), beta isoform
Hs.241515	37394	R49679	COX11 (yeast) homolog, cytochrome c oxidase assembly protein
Hs.28777	283919	N50797	H2A histone family, member L
Hs.75752	285455	N63245	cytochrome c oxidase subunit VIIIb
Hs.179735	340781	W56747	ras homolog gene family, member C
Hs.16364	38571	R51498	hypothetical protein FLJ10955
Hs.77274	143356	R74194	plasminogen activator, urokinase
Hs.86386	146164	R79099	myeloid cell leukemia sequence 1 (BCL2-related)
Hs.155103	222259	H83844	eukaryotic translation initiation factor 1A, Y chromosome
Hs.75478	342260	W61185	KIAA0956 protein
Hs.82316	470583	AA031928	interferon-induced, hepatitis C-associated microtubular aggregate protein (44kD)
Hs.75428	39993	R52548	superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))
Hs.94234	297884	N68934	frizzled (Drosophila) homolog 1
Hs.11899	21759	T65127	3-hydroxy-3-methylglutaryl-Coenzyme A reductase
Hs.76152	343315	W68075	decorin
Hs.165843	344021	W70096	casein kinase 2, beta polypeptide
Hs.77356	25291	R17745	transferrin receptor (p90, CD71)
Hs.75232	40704	R55993	SEC14 (S. cerevisiae)-like 1
Hs.2393	306175	N90546	phosphorylase kinase, alpha 1 (muscle)
Hs.8768	41144	R59152	hypothetical protein FLJ10849
Hs.84981	21640	T65431	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-

			strand-break rejoining; Ku autoantigen, 80kD)
Hs.77550	307169	N91798	CDC28 protein kinase 1
Hs.227949	345522	W72422	SEC13 (S. cerevisiae)-like 1
Hs.181028	307509	N95162	cytochrome c oxidase subunit Va
Hs.85838	156040	R72509	solute carrier family 16 (monocarboxylic acid transporters), member 3
Hs.181165	307988	N95281	eukaryotic translation elongation factor 1 alpha 1
Hs.108854	308000	N92290	HSPC163 protein
Hs.78060	42453	R61298	phosphorylase kinase, beta
Hs.26700	42358	R59858	Homo sapiens cDNA FLJ10309 fis, clone NT2RM2000287
Hs.75103	27100	R37146	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta polypeptide
Hs.16003	42714	R60888	retinoblastoma-binding protein 4
Hs.119387	110774	T90622	KIAA0792 gene product
Hs.77890	357308	W93728	guanylate cyclase 1, soluble, beta 3
Hs.250867	160363	H22334	zona pellucida glycoprotein 3A (sperm receptor)
Hs.180450	309185	N99249	ribosomal protein S24
Hs.118131	309218	N93850	5,10-methenyltetrahydrofolate synthetase (5-formyltetrahydrofolate cyclo-ligase)
Hs.117729	162681	H28224	keratin 14 (epidermolysis bullosa simplex, Dowling-Meara, Koebner)
Hs.195851	247237	N57938	actin, alpha 2, smooth muscle, aorta
Hs.78854	166145	R87471	ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 2 polypeptide
Hs.41688	250069	H97140	dual specificity phosphatase 8
Hs.77256	121554	T97906	enhancer of zeste (Drosophila) homolog 2
Hs.181163	45188	H08826	high-mobility group (nonhistone chromosomal) protein 17
Hs.75319	510231	AA053076	ribonucleotide reductase M2 polypeptide
Hs.149436	563057	AA113038	kinesin family member 5B
Hs.2934	46623	H10294	ribonucleotide reductase M1 polypeptide
Hs.79914	196071	R89380	lumican
Hs.79037	567278	AA130632	heat shock 60kD protein 1 (chaperonin)
Hs.180946	590007	AA155824	ribosomal protein L5
Hs.85844	323685	W44537	neurotrophic tyrosine kinase, receptor, type 1
Hs.26322	33430	R43993	cell cycle related kinase
Hs.6517	47514	H12216	amiloride-sensitive cation channel 1, neuronal (degenerin)
Hs.4209	323859	W46361	ribosomal protein, mitochondrial, L2
Hs.831	37162	R49317	3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase (hydroxymethylglutaricaciduria)
Hs.75862	23275	R39273	MAD (mothers against decapentaplegic,

Hs.117816	37540	R50950	Drosophila) homolog 4
Hs.198287	139392	R65579	sorcin
Hs.79117	38183	R49222	pregnancy specific beta-1-glycoprotein 11
Hs.259842	37296	R51092	corticotropin releasing hormone receptor 1
Hs.232068	42396	R60877	H91620p protein
			transcription factor 8 (represses interleukin 2 expression)
Hs.274344	118942	T92945	hypothetical protein
Hs.234799	51558	H21053	breakpoint cluster region
Hs.98493	23330	R38269	X-ray repair complementing defective repair in Chinese hamster cells 1
Hs.225841	23760	R38172	DKFZP434D193 protein
Hs.91985	52482	H22986	wingless-type MMTV integration site family, member 10B
Hs.173664	147016	R80150	v-erb-b2 avian erythroblastic leukemia viral oncogene homolog 2 (neuro/glioblastoma derived oncogene homolog)
Hs.179566	53273	R16162	Human clone 23799 mRNA sequence
Hs.180455	26222	R37437	RAD23 (S. cerevisiae) homolog A
Hs.77225	26790	R37680	ADP-ribosyltransferase (NAD <sup>+</sup> ; poly (ADP-ribose) polymerase)-like 1
Hs.63908	43168	R60538	heme oxygenase (decycling) 2
Hs.3843	28140	R40503	dual specificity phosphatase 7
Hs.89529	501617	AA129588	aldo-keto reductase family 1, member A1 (aldehyde reductase)
Hs.108043	36987	R48940	Friend leukemia virus integration 1
Hs.174007	133122	R26243	von Hippel-Lindau syndrome
Hs.108110	546454	AA081374	DKFZP547E2110 protein
Hs.1908	310779	W19210	proteoglycan 1, secretory granule
Hs.268149	30747	R42072	putative methyltransferase
Hs.12743	363489	AA019803	Homo sapiens clone 24511 mRNA sequence
Hs.180255	186767	H50623	major histocompatibility complex, class II, DR beta 1
Hs.108323	31669	R43030	ubiquitin-conjugating enzyme E2E 2 (homologous to yeast UBC4/5)
Hs.48876	123355	T99625	farnesyl-diphosphate farnesyltransferase 1
Hs.174905	47304	H10460	KIAA0033 protein
Hs.76716	127599	R09178	pre-alpha (globulin) inhibitor, H3 polypeptide
Hs.25615	380437	AA054135	CGI-119 protein
Hs.247565	380875	AA056094	rhodopsin (retinitis pigmentosa 4, autosomal dominant)
Hs.8551	34872	R44450	PRP4/STK/WD splicing factor
Hs.6289	35871	R46034	growth factor receptor-bound protein 2
Hs.3631	49932	H29009	immunoglobulin (CD79A) binding protein 1
Hs.8128	50624	H17907	phosphatidylserine decarboxylase

Hs.183	22411	T82477	Duffy blood group
Hs.92323	511428	AA126009	FXFD domain-containing ion transport regulator 3
Hs.33287	145106	R77291	nuclear factor I/B
Hs.76293	512246	AA057636	thymosin, beta 10
Hs.17775	342742	W68632	p75NTR-associated cell death executor; ovarian granulosa cell protein (13kD)
Hs.6673	52600	H29041	trinucleotide repeat containing 15
Hs.168383	145112	R77293	intercellular adhesion molecule 1 (CD54), human rhinovirus receptor
Hs.1420	180447	R84974	fibroblast growth factor receptor 3 (achondroplasia, thanatophoric dwarfism)
Hs.19196	487778	AA045185	ubiquitin-conjugating enzyme HBUCE1
Hs.110637	487978	AA054590	homeo box A10
Hs.180919	240151	H82442	inhibitor of DNA binding 2, dominant negative helix-loop-helix protein
Hs.275374	491456	AA150441	aldo-keto reductase family 1, member C1 (dihydrodiol dehydrogenase 1; 20-alpha (3-alpha)-hydroxysteroid dehydrogenase)
Hs.28505	502133	AA126984	ubiquitin-conjugating enzyme E2H (homologous to yeast UBC8)
Hs.83760	359187	AA010108	troponin I, skeletal, fast
Hs.274434	309917	N94503	Homo sapiens cDNA FLJ11346 fis, clone PLACE1010900
Hs.55498	503118	AA151550	geranylgeranyl diphosphate synthase 1
Hs.22028	173777	H23796	SNARE protein
Hs.86958	359976	AA063518	interferon (alpha, beta and omega) receptor 2
Hs.13684	29797	R42224	hypothetical protein FLJ10761
Hs.198951	309864	N94468	jun B proto-oncogene
Hs.278626	505225	AA142922	Arg/Abl-interacting protein ArgBP2
Hs.77768	44495	H07123	heat shock protein, neuronal DNAJ-like 1
Hs.169921	548957	AA115186	general transcription factor II, i, pseudogene 1
Hs.159608	362864	AA019525	aldehyde dehydrogenase 10 (fatty aldehyde dehydrogenase)
Hs.23205	31567	R42860	membrane protein, palmitoylated 2 (MAGUK p55 subfamily member 2)
Hs.279850	45476	H08115	CGI-50 protein
Hs.183800	69255	T54339	Ran GTPase activating protein 1
Hs.169474	561918	AA085589	DKFZP586J0119 protein
Hs.182217	31798	R43131	succinate-CoA ligase, ADP-forming, beta subunit
Hs.231581	561922	AA085678	myosin, heavy polypeptide 1, skeletal muscle, adult
Hs.181696	364698	AA024422	zinc finger protein 255
Hs.40193	123815	R01452	hypothetical protein KIAA1259
Hs.108043	71822	T52520	Friend leukemia virus integration 1
Hs.151461	667365	AA228085	embryonic ectoderm development protein

Hs.1384	126309	R06411	O-6-methylguanine-DNA methyltransferase
Hs.19718	126379	R06556	protein tyrosine phosphatase, receptor type, U
Hs.46423	667303	AA227555	H4 histone family, member G
Hs.172458	47251	H10977	iduronate 2-sulfatase (Hunter syndrome)
Hs.250711	375752	AA033816	dipeptidyl carboxypeptidase 1 (angiotensin I converting enzyme)
Hs.102135	265879	N21005	signal sequence receptor, delta (translocon-associated protein delta)
Hs.121559	199577	R96579	CGI-30 protein
Hs.52763	66919	T67474	anaphase-promoting complex subunit 7
Hs.22891	267666	N23174	solute carrier family 7 (cationic amino acid transporter, y <sup>+</sup> system), member 8
Hs.64025	132373	R26526	basonuclin
Hs.75253	206506	H60000	isocitrate dehydrogenase 3 (NAD <sup>+</sup> ) gamma
Hs.90291	416587	W86459	laminin, beta 2 (laminin S)
Hs.9552	108323	T70592	binder of Arl Two
Hs.278736	53070	R16049	cell division cycle 42 (GTP-binding protein, 25kD)
Hs.66394	50188	H17943	ring finger protein 4
Hs.5120	33297	R43960	dynein, cytoplasmic, light polypeptide
Hs.739	86044	T62884	6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 1
Hs.151134	37433	R50947	oxidase (cytochrome c) assembly 1-like
Hs.82916	21912	T65288	chaperonin containing TCP1, subunit 6A (zeta 1)
Hs.17364	119345	T94329	zinc finger protein 79 (pT7)
Hs.73957	47559	H11455	RAB5A, member RAS oncogene family
Hs.155206	51480	H24014	serine/threonine kinase 25 (Ste20, yeast homolog)
Hs.89591	50182	H17883	Kallmann syndrome 1 sequence
Hs.267319	144767	R77223	endogenous retroviral protease
Hs.90093	39039	R51827	heat shock 70kD protein 4
Hs.697	40017	R52654	cytochrome c-1
Hs.170160	24743	R37588	RAB2, member RAS oncogene family-like
Hs.79530	21445	T65107	M5-14 protein
Hs.75925	24592	R38826	proteasome (prosome, macropain) inhibitor subunit 1 (P131)
Hs.15020	25700	R36870	homolog of mouse quaking QKI (KH domain RNA binding protein)
Hs.180532	25792	R36846	heat shock 90kD protein 1, alpha
Hs.36587	156436	R73564	protein phosphatase 1, regulatory subunit 7
Hs.111515	26964	R37773	CGI-43 protein
Hs.2838	42363	R61319	malic enzyme 3, NADP(+)-dependent, mitochondrial
Hs.19122	501557	AA135645	eukaryotic translation initiation factor 4E-like 3
Hs.68318	547571	AA083845	hypothetical protein FLJ20344



Hs.80475	45923	H09542	polymerase (RNA) II (DNA directed) polypeptide J (13.3kD)
Hs.30888	46147	H09580	cytochrome c oxidase subunit VIIa polypeptide 2 like
Hs.12887	47422	H11255	Soluble VEGF receptor
Hs.108931	377054	AA057615	MAGUK protein p55T; Protein Associated with Lins 2
Hs.173936	202498	H53121	interleukin 10 receptor, beta
Hs.180669	50107	H16738	conserved gene amplified in osteosarcoma
Hs.1032	328897	W45438	regenerating islet-derived 1 alpha (pancreatic stone protein, pancreatic thread protein)
Hs.119597	214028	H70783	stearoyl-CoA desaturase (delta-9- desaturase)
Hs.117848	285437	N66390	hemoglobin, epsilon 1
Hs.95665	40787	R56077	hypothetical protein
Hs.93304	238821	H65030	phospholipase A2, group VII (platelet- activating factor acetylhydrolase, plasma)
Hs.195464	489918	AA114828	filamin A, alpha (actin-binding protein- 280)
Hs.169832	490387	AA120779	zinc finger protein 42 (myeloid-specific retinoic acid- responsive)
Hs.74471	309079	N92894	gap junction protein, alpha 1, 43kD (connexin 43)
Hs.83147	491560	AA115549	guanine nucleotide binding protein-like 1
Hs.8248	28502	R37489	NADH dehydrogenase (ubiquinone) Fe-S protein 1 (75kD) (NADH-coenzyme Q reductase)
Hs.211584	28422	R40649	neurofilament, light polypeptide (68kD)
Hs.184050	28627	R40473	v-Ki-ras2 Kirsten rat sarcoma 2 viral oncogene homolog
Hs.79691	503974	AA130144	LIM domain protein
Hs.108139	504086	AA131858	zinc finger protein 212
Hs.75280	29795	R42222	glycyl-tRNA synthetase
Hs.1857	363198	AA018928	phosphodiesterase 6G, cGMP-specific, rod, gamma
Hs.173063	68616	T49793	transducin-like enhancer of split 2, homolog of Drosophila E(sp1)
Hs.180370	123883	R00785	cofilin 1 (non-muscle)
Hs.31939	67185	T52650	manic fringe (Drosophila) homolog
Hs.167835	365363	AA025214	acyl-Coenzyme A oxidase
Hs.90093	128251	R11513	heat shock 70kD protein 4
Hs.587	129068	R10850	arylamide deacetylase (esterase)
Hs.82254	48584	H16096	zuotin related factor 1
Hs.167839	324749	W47158	KIAA0395 protein
Hs.152818	272871	N36004	ubiquitin specific protease 8
Hs.18069	36128	R62434	protease, cysteine, 1 (legumain)
Hs.75485	21625	T65577	ornithine aminotransferase (gyrate atrophy)
Hs.83869	41134	R58972	hypothetical protein

Hs.4788	22490	T87616	KIAA0253 protein
Hs.37501	214636	H73190	MAD (mothers against decapentaplegic, Drosophila) homolog 5
Hs.199429	51483	H24016	Homo sapiens mRNA; cDNA DKFZp434M2216 (from clone DKFZp434M2216)
Hs.166887	51949	H24315	copine I
Hs.93379	23234	R38667	eukaryotic translation initiation factor 4B
Hs.241543	39177	R54415	DKFZP586F1524 protein
Hs.25333	470402	AA031292	interleukin 1 receptor, type II
Hs.11223	525983	AA076246	isocitrate dehydrogenase 1 (NADP+), soluble
Hs.2064	529070	AA064827	vimentin
Hs.155079	41356	R59165	protein phosphatase 2, regulatory subunit B (B56), alpha isoform
Hs.77502	530811	AA070029	methionine adenosyltransferase II, alpha
Hs.275924	345643	W71999	dystrophia myotonica-containing WD repeat motif
Hs.227729	490760	AA133163	FK506-binding protein 2 (13kD)
Hs.52644	309290	N93925	SKAP55 homologue
Hs.115740	28572	R40902	KIAA0210 gene product
Hs.82285	28596	R37481	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase
Hs.75812	28884	R40253	phosphoenolpyruvate carboxykinase 2 (mitochondrial)
Hs.23978	363287	AA019362	scaffold attachment factor B
Hs.278857	45625	H08426	heterogeneous nuclear ribonucleoprotein H2 (H')
Hs.25035	666087	AA193554	chloride intracellular channel 4 like
Hs.234546	126487	R06623	GM2R2 for guanosine monophosphate reductase isolog
Hs.184760	264287	N21190	CCAAT-box-binding transcription factor
Hs.77929	128773	R16755	excision repair cross-complementing rodent repair deficiency, complementation group 3 (xeroderma pigmentosum group B complement)
Hs.75932	34298	R44350	N-ethylmaleimide-sensitive factor attachment protein, alpha
Hs.157145	48300	H14474	tetracycline transporter-like protein
Hs.2227	612403	AA179189	CCAAT/enhancer binding protein (C/EBP), gamma
Hs.205842	220120	H82605	Homo sapiens mRNA; cDNA DKFZp434L231 (from clone DKFZp434L231)
Hs.99855	146605	R79948	formyl peptide receptor-like 1
Hs.69423	526283	AA079782	kallikrein 10
Hs.153678	485750	AA039934	reproduction 8

Hs.279651	346688	W74647	melanoma inhibitory activity
Hs.169886	489919	AA114835	tenascin XA
Hs.1757	774100	AA442123	L1 cell adhesion molecule (hydrocephalus, stenosis of aqueduct of Sylvius 1, MASA (mental retardation, aphasia, shuffling gait))
Hs.250911	545323	AA076582	interleukin 13 receptor, alpha 1
Hs.25615	546600	AA084517	DnaJ-like heat shock protein 40
Hs.76038	44975	H08820	isopentenyl-diphosphate delta isomerase
Hs.261285	550127	AA101201	pleiotropic regulator 1 (PRL1, Arabidopsis homolog)
Hs.931	562597	AA086247	myosin, heavy polypeptide 2, skeletal muscle, adult
Hs.108957	321973	W37801	40S ribosomal protein S27 isoform
Hs.247309	123782	R01201	succinate-CoA ligase, GDP-forming, beta subunit
Hs.96247	645235	AA199863	translin-associated factor X
Hs.279946	32132	R42928	methionine-tRNA synthetase
Hs.75932	32531	R43287	N-ethylmaleimide-sensitive factor attachment protein, alpha
Hs.95998	126314	R06415	Friedreich ataxia
Hs.9908	73531	T55560	nitrogen fixation cluster-like
Hs.82043	33109	R44799	D123 gene product
Hs.67726	128000	R09347	macrophage receptor with collagenous structure
Hs.79187	265680	N25352	coxsackie virus and adenovirus receptor
Hs.748	47723	H11614	fibroblast growth factor receptor 1 (fms-related tyrosine kinase 2, Pfeiffer syndrome)
Hs.193852	199655	R96618	ATP-binding cassette, sub-family C (CFTR/MRP), member 2
Hs.79748	267637	N25433	solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2
Hs.154679	48114	H11494	synaptotagmin 1
Hs.81915	382295	AA062858	leukemia-associated phosphoprotein p18 (stathmin)
Hs.73986	49237	H15069	CDC-like kinase 2
Hs.194638	49548	H15431	polymerase (RNA) II (DNA directed) polypeptide D
Hs.78596	208005	H60553	proteasome (prosome, macropain) subunit, beta type, 5
Hs.94498	277906	N63398	leukocyte immunoglobulin-like receptor, subfamily A (with TM domain), member 2
Hs.167835	210862	H65660	acyl-Coenzyme A oxidase
Hs.149894	50754	H18070	mitochondrial translational initiation factor 2
Hs.154437	22165	T66157	phosphodiesterase 2A, cGMP-stimulated
Hs.102876	328750	W45402	pancreatic lipase
Hs.199160	511356	AA086055	myeloid/lymphoid or mixed-lineage

Hs.91773	23534	R38106	leukemia (trithorax ( <i>Drosophila</i> ) homolog)
Hs.13370	24175	R39324	protein phosphatase 2 (formerly 2A),
Hs.75576	232629	H72599	catalytic subunit, alpha isoform
Hs.80350	25263	R12792	DKFZP564G0222 protein
			plasminogen
Hs.83920	25457	R39849	protein phosphatase 2 (formerly 2A),
			catalytic subunit, beta isoform
			peptidylglycine alpha-amidating
			monooxygenase
Hs.154510	529844	AA070863	carbonyl reductase 3
Hs.78869	26531	R38473	transcription elongation factor A (SII), 1
Hs.6762	26689	R39132	hypothetical protein
Hs.147176	531496	AA074202	Homo sapiens eps15R mRNA, partial cds
Hs.31472	27920	R40486	transforming growth factor beta-activated
			kinase-binding protein 1
Hs.75551	43960	H04825	Ras suppressor protein 1
Hs.198248	320285	W04613	UDP-Gal:betaGlcNAc beta 1,4-
			galactosyltransferase, polypeptide 1
Hs.85937	561840	AA086285	myosin-binding protein C, fast-type
Hs.29222	125674	R07481	zinc finger protein 76 (expressed in testis)
Hs.597	32936	R43808	glutamic-oxaloacetic transaminase 1,
			soluble (aspartate aminotransferase 1)
Hs.75412	196501	R91550	Arginine-rich protein
Hs.239298	37210	R50928	microtubule-associated protein 4
Hs.118725	51680	H23998	selenophosphate synthetase 2
Hs.2043	526334	AA079855	adenine nucleotide translocator 1 (skeletal
			muscle)
Hs.142	526852	AA113154	sulfotransferase family 1A, phenol-
			preferring, member 1
Hs.11223	28095	R40321	isocitrate dehydrogenase 1 (NADP+),
			soluble
Hs.194692	28615	R40452	cysteine desulfurase
Hs.108623	28330	R40660	thrombospondin 2
Hs.110165	358675	W94107	ribosomal protein L26 homolog
Hs.165843	51528	H20727	casein kinase 2, beta polypeptide
Hs.108112	44319	H05287	histone fold protein CHRAC17; DNA
			polymerase epsilon p17 subunit
Hs.77917	29799	R42127	ubiquitin carboxyl-terminal esterase L3
			(ubiquitin thiolesterase)
Hs.17958	120278	T96983	cerebroside (3'-
			phosphoadenylylsulfate:galactosylceramide
			3') sulfotransferase
Hs.20912	179130	H50183	adenomatous polyposis coli like
Hs.279591	256357	H94013	Cyclin-dependent kinase 7
Hs.36566	31097	R41791	LIM domain kinase 1
Hs.78225	186308	H29761	annexin A1
Hs.83484	68607	T53300	SRY (sex determining region Y)-box 4
Hs.40735	364722	AA024552	frizzled ( <i>Drosophila</i> ) homolog 3
Hs.5862	32316	R42908	hypothetical protein
Hs.251972	193602	H47573	complement component 3
Hs.104433	665299	AA195289	Homo sapiens napsin 2 precursor, mRNA,
			partial sequence
Hs.113052	125148	R05309	RNA cyclase homolog
Hs.76494	565991	AA121850	proline arginine-rich end leucine-rich
			repeat protein
Hs.33713	203385	H54815	myo-inositol 1-phosphate synthase A1
Hs.79709	49287	H15647	phosphatidylinositol transfer protein
Hs.11930	82941	T69406	nuclear receptor subfamily 0, group B,
			member 2
Hs.75348	36060	R46376	proteasome (prosome, macropain) activator
			subunit 1 (PA28 alpha)
Hs.154320	273466	N36891	ubiquitin-activating enzyme E1C
			(homologous to yeast UBA3)
Hs.1189	208369	H62837	E2F transcription factor 3

유니진 클러스터	좌상 ID	진뱅크 수납번호	예상 유전자(putative gene)
Hs.107600	51686	H24004	EST
Hs.109212	190915	H39221	ESTs, Weakly similar to Kelch motif containing protein [H.sapiens]
NA	80790	T63042	NA
Hs.30868	236388	H62405	ESTs
NA	322334	NA	NA
NA	129855	NA	NA
Hs.20588	210873	H67736	ESTs, Moderately similar to PAHO_HUMAN PANCREATIC HORMONE PRECURSOR [H.sapiens]
Hs.146215	153571	R48535	ESTs
Hs.222195	301238	N80787	ESTs
Hs.29403	156906	R74233	ESTs, Weakly similar to DDX8_HUMAN PROBABLE ATP-DEPENDENT RNA HELICASE HRH1 [H.sapiens]
Hs.168236	113949	T79758	ESTs
Hs.246023	264571	N20320	EST
NA	129757	NA	NA
NA	108340	T70599	NA
Hs.117565	142760	R71081	ESTs
Hs.103420	471619	AA035469	ESTs
NA	27300	NA	NA
NA	60298	NA	NA
Hs.104623	214600	H71226	ESTs, Highly similar to KIAA0940 protein [H.sapiens]
NA	53082	NA	NA
Hs.74052	307138	N93721	ESTs
Hs.8977	67397	T49325	ESTs
NA	567395	AA130843	NA
Hs.113980	202051	R99560	ESTs, Weakly similar to [Human endogenous retrovirus type C oncovirus sequence.], gene product [H.sapiens]
Hs.270197	66996	T69707	ESTs
NA	213894	H72939	NA
Hs.119756	38816	R49144	ESTs
Hs.183071	108309	T70568	ESTs
Hs.36102	232772	H72723	ESTs, Highly similar to MT1B_HUMAN METALLOTHIONEIN-IB [H.sapiens]
NA	67885	T52774	NA
Hs.203367	134322	R31938	ESTs
NA	72672	T50400	NA
Hs.31171	148609	H12612	ESTs
NA	530744	AA069924	NA

Hs.21667	245813	N55301	ESTs
Hs.12152	29602	R42296	ESTs, Moderately similar to SRPB_MOUSE SIGNAL RECOGNITION PARTICLE RECEPTOR BETA SUBUNIT [M.musculus]
Hs.93967	180161	R85501	ESTs
NA	66469	NA	NA
Hs.169161	35000	R45094	ESTs, Moderately similar to MAON_HUMAN NADP-DEPENDENT MALIC ENZYME, MITOCHONDRIAL PRECURSOR [H.sapiens]
Hs.18627	37178	R49398	ESTs, Weakly similar to GP36b glycoprotein [H.sapiens]
NA	219689	H80014	NA
Hs.31848	525319	AA069144	ESTs, Weakly similar to hypothetical protein [H.sapiens]
NA	526038	AA076128	NA
NA	146842	R80670	NA
Hs.125042	239510	H81265	ESTs
NA	545120	AA075716	NA
Hs.107382	44151	H05814	ESTs
NA	29532	R41566	NA
Hs.125729	310600	N99898	ESTs, Weakly similar to zinc finger protein zfp31 [H.sapiens]
NA	548932	AA115168	NA
NA	124187	R01274	NA
Hs.31110	47703	H12084	ESTs, Weakly similar to MAGE-B4 [H.sapiens]
Hs.13155	67006	T69711	EST
NA	530033	AA070488	NA
NA	530736	AA069921	NA
NA	531578	AA074126	NA
Hs.6820	28213	R40787	ESTs, Weakly similar to putative [C.elegans]
NA	546973	AA083382	NA
Hs.91785	31123	R42362	ESTs
Hs.230064	108369	T77828	EST
Hs.265200	624513	AA187228	ESTs, Highly similar to S29331 glutamate dehydrogenase - human [H.sapiens]
Hs.22893	32643	R43166	ESTs
NA	66347	NA	NA
Hs.269425	381260	AA057000	ESTs, Highly similar to dJ283E3.6.1 [H.sapiens]
Hs.36269	416646	W86446	ESTs, Weakly similar to ODB2_HUMAN LIPOAMIDE ACYLTRANSFERASE

NA	53024	R15882	COMPONENT OF BRANCHED- CHAIN ALPHA-KETO ACID DEHYDROGENASE COMPL
Hs.278871	51017	H19309	NA
			ESTs, Weakly similar to AC007228_2 BC37295_1 [H.sapiens]
Hs.10846	152989	R50746	ESTs, Weakly similar to JH0783 diamine N-acetyltransferase [H.sapiens]
Hs.137361	488337	AA046643	ESTs, Weakly similar to RAS- RELATED PROTEIN RAB-7 [H.sapiens]
NA	530870	AA070154	NA
NA	531411	AA071566	NA
NA	544846	AA075338	NA
Hs.177276	202575	H53817	ESTs
Hs.191112	67022	T69727	ESTs
NA	68185	T52983	NA
Hs.131897	67064	T70341	ESTs
Hs.24889	41388	R56121	ESTs
NA	66327	NA	NA
NA	544820	AA075280	NA
Hs.143333	193846	H51750	EST
NA	526156	AA076627	NA
NA	530281	AA112048	NA
Hs.44426	346063	W72646	ESTs, Weakly similar to GSHH_HUMAN PHOSPHOLIPID HYDROPEROXIDE GLUTATHIONE PEROXIDASE [H.sapiens]
NA	545623	AA078835	NA
Hs.43897	257368	N27163	ESTs, Weakly similar to P2CA_HUMAN PROTEIN PHOSPHATASE 2C ALPHA ISOFORM [H.sapiens]
Hs.172080	129000	R10363	ESTs
Hs.146182	208169	H60623	ESTs, Weakly similar to lactase phlorizinhydrolase [H.sapiens]
Hs.251946	418006	W90707	ESTs, Moderately similar to PAB1_HUMAN POLYADENYLATE- BINDING PROTEIN 1 [H.sapiens]
Hs.177276	202575	H53817	ESTs
NA	544954	AA075353	NA
Hs.269605	545077	AA075680	ESTs, Moderately similar to SUCCINAT DEHYDROGENASE [H.sapiens]
Hs.26481	43460	H05933	ESTs, Weakly similar to NS1-binding protein [H.sapiens]
Hs.9299	31987	R43047	ESTs
Hs.106356	32991	R44770	ESTs
Hs.173121	486296	AA044079	ESTs
NA	545681	AA079371	NA
NA	546318	AA084033	NA
Hs.261330	548702	AA125823	ESTs, Highly similar to dJ109F14.2 [H.sapiens]
NA	69410	NA	NA
NA	67419	T49342	NA
Hs.134013	381968	AA063646	ESTs, Moderately similar to NK homeobox protein [H.sapiens]

유니진 클러스터	화상 ID	진뱅크 수납번호	예상 유전자(putative gene)
Hs.183864	328527	W40254	elastase 3B
NA	119202	T94099	NA
Hs.30352	429312	AA007373	ribosomal protein S6 kinase, 52kD, polypeptide 1
Hs.79474	38287	R49224	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, epsilon polypeptide
Hs.177592	141028	R66697	ribosomal protein, large, P1
Hs.184093	510608	AA099408	HERV-H LTR-associating 1
Hs.87149	290759	N67642	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
NA	144825	R76566	NA
Hs.151123	290283	N64471	neuronal Shc
Hs.4217	145899	R79161	collagen, type VI, alpha 2
Hs.100000	122381	T99218	S100 calcium-binding protein A8 (calgranulin A)
Hs.249982	40205	R52103	cathepsin B
Hs.4814	40617	R55744	mannosidase, alpha, class 1B, member 1
Hs.154654	25594	R15113	cytochrome P450, subfamily I (dioxin-inducible), polypeptide 1 (glaucoma 3, primary infantile)
NA	527085	AA114048	NA
Hs.2250	153025	R50354	leukemia inhibitory factor (cholinergic differentiation factor)
Hs.25590	153589	R48580	stanniocalcin
Hs.2633	108222	T69781	desmoglein 1
Hs.85701	345430	W72473	phosphoinositide-3-kinase, catalytic, alpha polypeptide
Hs.211578	345935	W72201	MAD (mothers against decapentaplegic, Drosophila) homolog 3
Hs.2030	205185	H59861	thrombomodulin
Hs.115396	155233	R70379	immunoglobulin heavy constant delta
Hs.366	489620	AA099044	6-pyruvoyltetrahydropterin synthase
Hs.1675	309295	N93935	gamma-glutamyltransferase-like activity 1
Hs.84229	38040	R59398	splicing factor, arginine/serine-rich 8 (suppressor-of-white-apricot, Drosophila homolog)
Hs.43857	113822	T77062	similar to glucosamine-6-sulfatases
Hs.55967	309974	N99100	short stature homeobox 2
Hs.86347	31156	R42595	ESTs, Weakly similar to predicted using Genefinder [C.elegans]
Hs.79059	45133	H07895	transforming growth factor, beta receptor III (betaglycan, 300kD)



NA	256612	NA	NA
Hs.82269	258229	N30652	progesterone-associated endometrial protein (placental protein 14, pregnancy-associated endometrial alpha-2-globulin, alpha u
Hs.77840	261258	H98114	annexin A4
Hs.9075	562928	AA085850	serine/threonine kinase 17a (apoptosis-inducing)
Hs.78056	32041	R41770	cathepsin L
Hs.789	323238	W42723	GRO1 oncogene (melanoma growth stimulating activity, alpha)
Hs.77572	47493	H11583	BCL2/adenovirus E1B 19kD-interacting protein 1
Hs.107966	199180	R95740	paraoxonase 3
Hs.22026	129610	R16547	ESTs
Hs.154443	200536	R99175	minichromosome maintenance deficient (S. cerevisiae) 4
Hs.85137	591617	AA158803	cyclin A2
Hs.31130	48276	H12262	transmembrane 7 superfamily member 2
Hs.7645	201352	R98600	fibrinogen, B beta polypeptide
Hs.31137	66972	T67544	protein tyrosine phosphatase, receptor type, epsilon polypeptide
Hs.86347	270794	N32932	ESTs, Weakly similar to predicted using Genefinder [C.elegans]
Hs.83341	49318	H15718	AXL receptor tyrosine kinase
Hs.202362	270895	N32504	ESTs, Weakly similar to S71091 acetyl-CoA carboxylase [H.sapiens]
Hs.170114	270560	N33237	KIAA0061 protein
Hs.24309	133914	R28671	hypothetical protein FLJ11106
NA	108296	T70555	NA
Hs.94360	82205	T68873	metallothionein 1L
Hs.181392	135225	R32850	major histocompatibility complex, class I, E
Hs.81118	274197	H49887	leukotriene A4 hydrolase
Hs.104203	36992	R48944	ESTs
Hs.17411	327073	W02696	KIAA0699 protein
Hs.82269	327077	W02698	progesterone-associated endometrial protein (placental protein 14, pregnancy-associated endometrial alpha-2-globulin, alpha u
NA	108418	T77845	NA
Hs.94382	279363	N48691	adenosine kinase
Hs.6456	211555	H56330	chaperonin containing TCP1, subunit 2 (beta)
Hs.169907	21994	T66320	glutathione S-transferase A4
Hs.74561	428909	AA004817	alpha-2-macroglobulin
Hs.274260	108190	T69749	ATP-binding cassette, sub-family C (CFTR/MRP), member 6

Hs.13225	22396	T87624	UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, polypeptide 4
Hs.79345	22304	T82485	coagulation factor VIIIc, procoagulant component (hemophilia A)
Hs.182490	286024	N64275	leucine-rich protein mRNA
Hs.75627	141979	R69023	CD14 antigen
Hs.153614	287575	N62125	retinitis pigmentosa GTPase regulator
Hs.20423	143388	R74208	NOT4 (negative regulator of transcription 4, yeast) homolog
NA	52365	H24082	NA
Hs.194720	52150	H24068	ATP-binding cassette, sub-family G (WHITE), member 2
Hs.75410	342231	W61143	heat shock 70kD protein 5 (glucose-regulated protein, 78kD)
Hs.799	24365	R37964	diphtheria toxin receptor (heparin-binding epidermal growth factor-like growth factor)
Hs.31819	52295	H24360	ESTs, Weakly similar to thioredoxin-like protein [H.sapiens]
Hs.3280	297727	N69907	caspase 6, apoptosis-related cysteine protease
Hs.18212	230060	H68190	DNA segment on chromosome X (unique) 9879 expressed sequence
Hs.77274	143356	R74194	plasminogen activator, urokinase
Hs.6066	24792	R38781	Rho guanine nucleotide exchange factor (GEF) 4
Hs.228572	150162	H04461	EST
Hs.198891	40240	R55052	serine/threonine-protein kinase PRP4 homolog
NA	231916	H92881	NA
Hs.118845	301128	N81117	troponin C, slow
Hs.75517	526215	AA076664	laminin, beta 3 (nicein (125kD), kalinin (140kD), BM600 (125kD))
Hs.75819	40348	R54793	glycoprotein M6A
Hs.75354	40567	R55251	GCN1 (general control of amino-acid synthesis 1, yeast)-like 1
Hs.63510	301301	N80830	KIAA0141 gene product
Hs.199533	21418	T65374	ESTs
NA	238357	H64393	NA
Hs.7158	307072	N89678	DKFZP566H073 protein
Hs.167292	345648	W72064	ESTs, Weakly similar to zinc finger protein C2H2-25 [H.sapiens]
Hs.76366	345703	W71991	BCL2-antagonist of cell death
Hs.87149	200209	R97831	integrin, beta 3 (platelet glycoprotein IIIa, antigen CD61)
Hs.251653	41413	R56886	tubulin, beta, 2
Hs.117852	238349	H64389	ATP-binding cassette, sub-family D (ALD), member 2
Hs.115537	26189	R20620	ESTs, Weakly similar to

Hs.7844	42075	R60845	MICROSOMAL DIPEPTIDASE PRECURSOR [H.sapiens] golgi autoantigen, golgin subfamily b, macrogolgin (with transmembrane signal), 1
Hs.1239	109164	T81089	alanyl (membrane) aminopeptidase (aminopeptidase N, aminopeptidase M, microsomal aminopeptidase, CD13, p150)
Hs.77899	307949	N92266	tropomyosin 1 (alpha)
Hs.8123	346824	W78007	chromobox homolog 3 (Drosophila HP1 gamma)
Hs.171731	240062	H82236	solute carrier family 14 (urea transporter), member 1 (Kidd blood group)
Hs.2551	241489	H90431	adrenergic, beta-2-, receptor, surface
Hs.184161	310131	N98616	exostoses (multiple) 1
Hs.75596	376696	AA046615	interleukin 2 receptor, beta
Hs.1422	347751	W81586	Gardner-Rasheed feline sarcoma viral (v-fgr) oncogene homolog
Hs.507	357785	W95595	corneodesmosin
Hs.75445	27542	R40157	SPARC-like 1 (mast9, hevin)
Hs.26691	43006	R59736	ESTs
NA	163482	H14182	NA
NA	544875	AA075381	NA
Hs.168236	113951	T79759	ESTs
Hs.256309	309944	N94512	Human beta-1D integrin mRNA, cytoplasmic domain, partial cds
Hs.182741	310447	N98462	TIA1 cytotoxic granule-associated RNA-binding protein-like 1
Hs.215595	120148	T95078	guanine nucleotide binding protein (G protein), beta polypeptide 1
NA	547027	AA082916	NA
NA	68351	NA	NA
Hs.8015	44909	H07857	ubiquitin specific protease 21
Hs.9475	67188	T52634	ESTs, Weakly similar to GTR5_HUMAN GLUCOSE TRANSPORTER TYPE 5, SMALL INTESTINE [H.sapiens]
Hs.234773	509919	AA056421	ecotropic viral integration site 1
Hs.34853	260740	H97932	inhibitor of DNA binding 4, dominant negative helix-loop-helix protein
Hs.155606	364554	AA022577	paired mesoderm homeo box 1
Hs.154095	261759	H99156	zinc finger protein 143 (clone pHZ-1)
NA	322339	NA	NA
Hs.81737	262750	H99622	palmitoyl-protein thioesterase 2
Hs.181125	194467	R83196	immunoglobulin lambda locus
Hs.278607	263725	H99680	ubiquitin activating enzyme E1-like protein

Hs.404	46936	H10052	myeloid/lymphoid or mixed-lineage leukemia (trithorax (Drosophila) homolog); translocated to, 3
Hs.1197	128225	R11507	heat shock 10kD protein 1 (chaperonin 10)
Hs.83050	128937	R10699	phosphoinositide-3-kinase, regulatory subunit 4, p150
Hs.1012	129270	R11065	complement component 4-binding protein, alpha
Hs.274260	200946	R97755	ATP-binding cassette, sub-family C (CFTR/MRP), member 6
Hs.28532	68011	T49766	ESTs, Weakly similar to BAI1-associated protein 1 [H.sapiens]
Hs.76722	594019	AA165157	CCAAT/enhancer binding protein (C/EBP), delta
Hs.75621	78425	T61377	protease inhibitor 1 (anti-elastase), alpha-1-antitrypsin
Hs.9994	201995	R99339	lipase, hepatic
Hs.74111	49402	H15565	RNA-binding protein (autoantigenic)
Hs.848	610317	AA171524	FK506-binding protein 4 (59kD)
Hs.73853	612944	AA181547	bone morphogenetic protein 2
Hs.76688	83060	T67816	carboxylesterase 1 (monocyte/macrophage serine esterase 1)
Hs.197728	85578	T72257	carboxylesterase 2 (intestine, liver)
Hs.75155	85640	T62051	transferrin
Hs.78036	137257	R36683	solute carrier family 6 (neurotransmitter transporter, noradrenalin), member 2
Hs.107082	139304	R63714	ESTs, Moderately similar to alternatively spliced product using exon 13A [H.sapiens]
Hs.6518	50866	H17125	ganglioside expression factor 2
Hs.198253	139530	R62322	major histocompatibility complex, class II, DQ alpha 1
Hs.265262	141115	R66326	colony stimulating factor 2 receptor, beta, low-affinity (granulocyte-macrophage)
Hs.124186	141298	R63802	ring finger protein 2
Hs.82985	340928	W57799	collagen, type V, alpha 2
Hs.155924	23235	R39184	cAMP responsive element modulator
Hs.272630	512924	AA063307	vacuolar proton pump delta polypeptide
Hs.155140	21658	T65122	casein kinase 2, alpha 1 polypeptide
NA	145407	R78034	NA
Hs.182490	53071	R16051	leucine-rich protein mRNA
Hs.184669	153055	R50369	zinc finger protein 144 (Mel-18)
Hs.50651	171569	H18190	Janus kinase 1 (a protein tyrosine kinase)
Hs.83393	344997	W72895	cystatin E/M
Hs.268915	108235	T69792	ESTs

Hs.263671	488635	AA044896	Homo sapiens mRNA; cDNA DKFZp434I0812 (from clone DKFZp434I0812); partial cds
Hs.85701	250142	N23534	phosphoinositide-3-kinase, catalytic, alpha polypeptide
Hs.67397	530888	AA069960	homeo box A1
Hs.153612	308682	N95462	ATP-binding cassette, sub-family F (GCN20), member 2
Hs.9873	244132	N52439	Homo sapiens mRNA; cDNA DKFZp434E0620 (from clone DKFZp434E0620); partial cds
NA	544792	AA075319	NA
Hs.75682	43714	H05738	autoantigen
Hs.251972	28386	R37386	complement component 3
Hs.155392	43852	H04819	collapsin response mediator protein 1
NA	545884	AA079529	NA
Hs.98493	29438	R41276	X-ray repair complementing defective repair in Chinese hamster cells 1
Hs.64016	250640	H98523	protein S (alpha)
Hs.119251	546466	AA084355	ubiquinol-cytochrome c reductase core protein I
Hs.77448	44289	H06253	aldehyde dehydrogenase 4 (glutamate gamma-semialdehyde dehydrogenase; pyrroline-5-carboxylate dehydrogenase)
Hs.1139	360293	AA013183	cold shock domain protein A
Hs.41066	252534	H87476	ESTs, Moderately similar to EFGM_RAT ELONGATION FACTOR G, MITOCHONDRIAL PRECURSOR [R.norvegicus]
NA	547154	AA084870	NA
Hs.18894	320170	W04536	adaptor-related protein complex 1, mu 2 subunit
Hs.160318	561873	AA086437	FXFD domain-containing ion transport regulator 1 (phospholemman)
Hs.234773	625011	AA181023	ecotropic viral integration site 1
Hs.151573	33049	R44018	cryptochrome 1 (photolyase-like)
Hs.179606	46631	H10061	nuclear RNA helicase, DECD variant of DEAD box family
Hs.30965	46843	H10072	neuronal Shc adaptor homolog
Hs.107444	46667	H09790	Homo sapiens cDNA FLJ20562 fis, clone KAT11992
Hs.154103	127614	R09181	LIM protein (similar to rat protein kinase C-binding enigma)
NA	75009	T51849	NA
Hs.25615	200648	R99249	CGI-119 protein
Hs.78225	267361	N24938	annexin A1
Hs.118666	49272	H16503	Human clone 23759 mRNA, partial cds
Hs.166017	268834	N26000	microphthalmia-associated transcription factor

Hs.77424	81221	T57079	Fc fragment of IgG, high affinity Ia, receptor for (CD64)
NA	611899	AA178923	NA
Hs.160786	83166	T68162	argininosuccinate synthetase
Hs.19121	36905	R49169	adaptor-related protein complex 2, alpha 2 subunit
Hs.89649	49995	H28958	epoxide hydrolase 1, microsomal (xenobiotic)
Hs.84981	36341	R62442	X-ray repair complementing defective repair in Chinese hamster cells 5 (double-strand-break rejoining; Ku autoantigen, 80kD)
Hs.241567	139988	R64674	RNA binding motif, single stranded interacting protein 1
Hs.78353	21899	T65211	SFRS protein kinase 2
Hs.75613	429981	AA034145	CD36 antigen (collagen type I receptor, thrombospondin receptor)
Hs.4096	340876	W57561	KIAA0742 protein
Hs.75428	48198	H11120	superoxide dismutase 1, soluble (amyotrophic lateral sclerosis 1 (adult))
NA	513140	AA063384	NA
Hs.239176	148379	H13300	insulin-like growth factor 1 receptor
NA	235880	H52231	NA
Hs.203246	239973	H79874	ESTs, Moderately similar to ZN91_HUMAN ZINC FINGER PROTEIN 91 [H.sapiens]
Hs.75511	267256	N23360	connective tissue growth factor
Hs.180383	42464	R59865	dual specificity phosphatase 6
Hs.15114	489708	AA099583	ras homolog gene family, member D
NA	530923	AA070369	NA
Hs.155020	27326	R37020	putative methyltransferase
Hs.131255	245269	N54563	ubiquinol-cytochrome c reductase binding protein
Hs.1252	356915	W92730	apolipoprotein H (beta-2-glycoprotein I)
Hs.2430	501972	AA128103	transcription factor-like 1
Hs.21618	28938	R40823	ESTs
Hs.76392	309912	N94493	aldehyde dehydrogenase 1, soluble
Hs.1521	503206	AA148925	immunoglobulin mu binding protein 2
Hs.2780	155061	R70216	jun D proto-oncogene
NA	546664	AA084411	NA
Hs.169921	548957	AA115186	general transcription factor II, i, pseudogene 1
Hs.151236	547732	AA084099	highly charged protein
Hs.173135	67286	T49194	dual-specificity tyrosine-(Y)-phosphorylation regulated kinase 2
Hs.153998	363167	AA019082	creatine kinase, mitochondrial 1 (ubiquitous)
Hs.155597	257625	N30864	D component of complement (adipsin)
Hs.75111	45354	H09725	protease, serine, 11 (IGF binding)

Hs.70266	62112	T41077	yeast Sec31p homolog
Hs.217493	624382	AA182794	annexin A2
Hs.197289	187804	H44007	rab3 GTPase-activating protein, non-catalytic subunit (150kD)
Hs.106674	46154	H09066	BRCA1 associated protein-1 (ubiquitin carboxy-terminal hydrolase)
Hs.77805	32649	R43304	ATPase, H <sup>+</sup> transporting, lysosomal (vacuolar proton pump) 31kD; Vacuolar proton-ATPase, subunit E; V-ATPase, subunit E
Hs.123122	667355	AA228030	FSH primary response (LRPR1, rat) homolog 1
Hs.66731	667188	AA236353	homeo box B13
Hs.13776	127047	R07880	ADP-ribosyltransferase 4
NA	66315	NA	NA
NA	66492	NA	NA
Hs.117077	586811	AA130717	zinc finger protein 264
Hs.267887	33005	R44793	adenyl cyclase-associated protein 2
Hs.184771	265874	N20996	nuclear factor I/C (CCAAT-binding transcription factor)
Hs.12653	66810	T64945	ESTs
NA	66814	T64947	NA
Hs.12107	267725	N25578	putative breast adenocarcinoma marker (32kD)
Hs.250666	130900	R22228	hairy (Drosophila)-homolog
Hs.183551	66986	T69703	EST
Hs.8110	593119	AA160915	adducin 3 (gamma)
Hs.10684	48653	H14599	Homo sapiens clone 24421 mRNA sequence
Hs.13880	35391	R45220	CGI-143 protein
Hs.82911	49507	H15572	protein tyrosine phosphatase type IVA, member 2
Hs.7912	35271	R45583	neuronal cell adhesion molecule
Hs.5636	35530	R45336	RAB6, member RAS oncogene family
Hs.23016	35630	R45296	Human orphan G protein-coupled receptor (RDC1) mRNA, partial cds
Hs.142258	613363	AA180403	signal transducer and activator of transcription 3 (acute-phase response factor)
Hs.41639	273845	N37094	programmed cell death 2
Hs.74583	50055	H17451	KIAA0275 gene product
Hs.271363	108322	T70583	ESTs
Hs.174185	108458	T80109	phosphodiesterase I/nucleotide pyrophosphatase 2 (autotaxin)
Hs.280666	37049	R49483	Homo sapiens chromosome 19, cosmid R32184
NA	108333	T70597	NA
Hs.192245	108461	T80112	ESTs

[ 4 ] ( IV )

유니진 클러스터	화상 ID	진뱅크 수납번호	예상 유전자(putative gene)
Hs.172028	212359	H69859	a disintegrin and metalloprotease domain 10
Hs.173310	49387	H15537	protocadherin gamma subfamily C, 3
Hs.83169	325050	W49497	matrix metalloproteinase 1 (interstitial collagenase)
Hs.34073	165834	R86708	BH-protocadherin (brain-heart)
Hs.118638	323236	W42722	non-metastatic cells 1, protein (NM23A) expressed in
Hs.154057	154770	R55625	matrix metalloproteinase 19
Hs.275243	526111	AA076242	S100 calcium-binding protein A6 (calyculin)
Hs.275163	325115	W47002	non-metastatic cells 2, protein (NM23B) expressed in
Hs.58324	345484	W72552	a disintegrin-like and metalloprotease (reprolysin type) with thrombospondin type 1 motif, 5 (aggrecanase-2)
Hs.118512	469969	AA029934	integrin, alpha V (vitronectin receptor, alpha polypeptide, antigen CD51)
Hs.2442	529120	AA065135	a disintegrin and metalloproteinase domain 9 (meltrin gamma)
Hs.2399	270505	N33214	matrix metalloproteinase 14 (membrane-inserted)
Hs.118638	81478	T63504	non-metastatic cells 1, protein (NM23A) expressed in
Hs.275243	326169	W52162	S100 calcium-binding protein A6 (calyculin)
Hs.155392	43852	H04819	collapsin response mediator protein 1

(Metastasis - Associated Genes)

( , CL<sub>1-1</sub> CL<sub>1-5</sub> ) (genetic determinants) in vivo in vitro , CL<sub>1-0</sub>  
 , 9600 cDNA

가 , I , 가  
 , cDNA ,

(clustering)

(Self - organizing maps:SOMs, , Tam

ayo et al.(1999), Proc. Natl. Acad. Sci. USA 96:2907)

. SOMs , 8,525

100 ; 4  
 (flow cytometric analysis)

cDNA 3 I , (signal  
 transduction molecules), (adhesion molecules), (cell cycle regulator), (urokinase - type) L6  
 , 가 II  
 III

(Arrays)

I, II, III, / IV

가

(configure)

3 ( , 3 ) 1 ( , (linear) ); 2 ( , );  
 UV - ( , , , , , ) . 2 ( , (mass spectroscopy plates),  
 - ( , ), ( , ), ( , ), ( , , , ) , PDMS, ( , ) . 3  
 , ( , ) (meshed) ( , (macroporous) 가 ,  
 , )



cm<sup>2</sup> 10, 50, 100, 200, 500, 1,000, 2,000, 10<sup>4</sup>, 10<sup>5</sup>, 10<sup>6</sup>, 10<sup>7</sup>, 10<sup>8</sup>, 10<sup>9</sup>  
 가 . 10, 100, 500, 1,000, 5,000, 10,000, 50,000, 99,999, 49,999 , 9, 99, 499, 999, 4, 999, 9,999, 49,999

5mm, 1mm, 100μm, 10μm, 1μm 가  
 5mm, 1mm, 100μm, 10μm, 1μm (capture agent) ( , ) 0.1μg, 1μg, 100ng, 10ng, 1ng, 100pg, 10pg, 1pg, 0.1pg 1  
 00, 10<sup>3</sup>, 10<sup>4</sup>, 10<sup>5</sup>, 10<sup>6</sup>, 10<sup>7</sup>, 10<sup>8</sup>, 10<sup>9</sup> .

( , No.5,143,854; 5,510,270; 5,527,68 (directed - flow methods)),  
 1), ( , No.5,384,261 (pin based method) ( , No.5,288,514 ), (bead based technique)( , PCT US/93/04145) 가 , 가 ( , )

( , ) T<sub>m</sub> T<sub>m</sub> , 20, 10, 5, 3,  
 2 (cross - hybridization) .

DNA - dT : RNA , , DNase

( , Current Protocols in Molecular Biology, John Wiley & Sons, N.Y.).  
 RNA RNA , , ,  
 (labeled) , ,  
 ( , - Cy5( ) - Cy3( )), ( , No.4,277,437), , ,  
 ( , - ( )) .  
 ( , )  
 (image) .

I, II, III, / IV

가 .

가 (96 ) 가 ( , Ge, H.(2000) Nucleic Acids Res. 28:e3, I - VII). (222 x 22 2mm 100,000 ) (PVDF) ( , Lueking et al.(1999). Anal. Biochem. 270:103 - 111).

( , Mendoza, et al.(1999). Biotechniques 27:778 - 788).

(1600spots/cm<sup>2</sup>)

( , Macbeath, G., and Schreiber, S.L.(2000) Science 289:1760 - 1763). De Wildt et al., , - 18,342

( , De Wildt et al.(2000). Nature Biotech. 18:989 - 994).

(abundance)

( , ) . ,

(transgene),

가(Evaluation Expression)

I, II, III, / IV mRNA (abundance); I, II, III, / IV mRNA, PCR, mRNA 가 mRNA (full-length), 가 I, II, III, 7, 15, 30, 50, 100 (stringent) m mRNA (format), 가 mRNA, 2, m RNA

I, II, III, / IV mRNA PCR(rtPCR) (Mullis(1987) No.4,683,202), 가 (ligase chain reaction)(Barany(1991) Proc. Natl. Acad. Sci. USA 88:189 - 193), (self sustained sequence replication)(Guatelli et al.(1990) Proc. Natl. Acad. Sci. USA 87:1874 - 1878), (Kwoh et al.(1989), Proc. Natl. Acad. Sci. USA 86:1173 - 1177), Q- (Q - Beta replicase)(Lizardi et al.(1988) Bio/Technology 6:1197), (rolling - circle replication)(No.5,854,033), 가 (5' 3' (flank). 가 1 situ mRNA / , in

I, II, III, IV  
 (agent)  
 가 (polyclonal)  
 가 (monoclonal)  
 ( , Fab F(ab')<sub>2</sub>)  
 " (labeled)"  
 가

in vitro in vitro in vivo  
 (EIA), (ELISA:enzyme linked immunosorbent assay),  
 (RIA), in vivo  
 가  
 (radioactive marker)  
 ( , ) ( )

(Expression Profiles)

가 ( , )  
 가  
 (numerical value) , , 1 (matrix), 1  
 .  $x\{x_a, x_b, \dots\}$   
 $x_a$  (local background level),  
 (variation) 가  
 ( , ) y x  
 value)( , ) 가 (scalar  
 가

SQL

) 가 ( , )  
 가 ( , )  
 )

(clustering)

(hierarchical) ( , Sokal and Michener(1958) Univ. Kans. sci. Bull. 38:1409),  
 (Bayesian) , k- ( , Tamayo et al.(1999) Proc. Natl. Acad. Sc  
 i. USA 96: 2907)

Golub et al. Science 286:531(1999)

/

, /

가 " (voting)" 가

( , )

(predictor) ( , 가 (weighting factor) )

, 가

가 (Transactional Methods for Evaluating a Sample)

가 가 ( , "

(courier service)

ts layer) ( , ) , HTTP(Hypertext Transfer Protocol)( , SSL(secure socket

( , HTML, XML )

(Screening a Test Compound)

( , , ) ( , , , , )  
500g/ 10,000g/ , 5,000g/ , 1,000g/ ,

( , DNA, RNA PNA(peptide nucleic acid))  
(peptidomimetics)( , (peptoids)),

( , No.5,010,175, Furka, Int. J. Pept. Prot. Res. 37:487 - 493  
(1991) Houghton et al., Nature 354:84 - 88(1991)), ( , PCT WO91/19735),  
( , PCT WO93/20242), - ( , PCT WO92/00091),  
( , No.5,288,514), (diversomers)( , H  
obbs et al., Proc. Nat. Acad. Sci. USA 90:6909 - 6913(1993)), ( , Hagihara et al.,  
J. Amer. Chem. Soc. 114:6568(1992)), (scaffolding) ( ,

Hirschmann et al., J. Amer. Chem. Soc. 114:9217 - 9218(1992)), ( ,  
 , Chen et al., J. Amer. Chem. Soc. 116:2661(1994)), ( , Cho et al., Science 261:130  
 3(1993)), / ( , Campbell et al., J. Org. Chem. 59:658(1994)), ( ,  
 , Ausubel, Berger and Sambrook, all supra), ( , No.5,539,083),  
 ( , Vaughn et al., Nature Biotechnology, 14(3):309 - 314(1996) PCT/US96/10287),  
 ( , Liang et al., Science, 274:1520 - 1522(1996) No.5,593,853),  
 ( , , Baum C& EN, Jan 18, page 33(1993); , No.5,569,588  
 ; , No. 5,549,974; , No.5,525,735 5,519,134;  
 , No.5,506,337; , No. 5,288,514 )

( ) . I, II, III, / IV

2

, CL<sub>1-0</sub> ( , CL<sub>1-1</sub> CL<sub>1-5</sub> ) .  
 , Cembridge Corp., San Diego, CA  
 10,000, 50,000, 100,000

CL<sub>1-0</sub>

" (candidate)" (drug) " (lead)"

(clearance)

가 re - activity relationships) (SAR: structu

가 , Nagarajan et al.(1988) J. Antibiot. 41:1430 -

8

ular Simulations, Inc. ). ( , Molec

< >

(Materials)

serum) RPMI , 37 , 20% O<sub>2</sub>, 5% CO<sub>2</sub> , 10% FBS(fetal bovine  
 ( , Chu et al.(1997) Am. J. Respir. Cell Mol. Biol.17:353 - 36  
 0).

in vitro 가  
 CL<sub>1-5</sub> SCID CL<sub>1</sub> in vivo C  
 L<sub>1-5</sub> - F<sub>4</sub>  
 CL<sub>1</sub> (MICS: membrane invasion culture system)  
 MICS, 10µm (Nucleopore Corp., Pleasanton, CA ) (50µg/Ml; Sigma Chemical Co., St. Louis, MO ), IV (50µg/Ml; Sigma ), (2mg/Ml; Bio-Rad, Hercules, CA ) 10mM MICS  
 CL<sub>1</sub> 10% NuSerum RPMI  
 (5 × 10<sup>4</sup> / ). 37 24  
 1mM EDTA (PBS) 3µm  
 (dot - blot) (Liu stain) (Handsel Technologies, Inc., Taipei, Taiwan )) 3

가(Tracheal Graft Invasion Assay)

in vitro / 가 in vivo  
 가 가 20mg Sprague - Dawley (SD)  
 - 70 - 3 CL<sub>1-0</sub>, CL<sub>1-1</sub> CL<sub>1-</sub>  
 5 (sub - confluence) 10<sup>6</sup>  
 , SCID  
 3 (graft) , SCID  
 SCID 4  
 1mm 3 Th  
 e Department of Animal Care, Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan  
 가 ..

(Biotinylated Probe Preparation and Microarray Hybridization)

mRNA 5mg ( , Chen et al.,(1998) Genomics 51:313 - 324; Hong et al.(2000) Am. J. Respir. Cell Mol. Biol. 23:355 - 363).  
 9,600 PCR - cDNA (18mm 27mm )  
 9600 EST(expressed sequence tag) (Unigene)  
 IMAGE cDNA ( , S  
 chuler(1997) J. Mol. Med. 75: 694 - 698). 3  
 (ScanView, Foster City, CA )  
 MuCDA ftp://genestamp.ibms.sinica.edu.t  
 w/marray /software 가

(Northern hybridization)

cDNA (trend) 10 6 16 c  
 DNA PCR ( , Hong et al.(2000)  
 Am. J. Respir. Cell Mol. Biol. 23:355 - 363).

(Flow Cytometric assay)

ine mAb CL<sub>1-0</sub> , CL<sub>1-1</sub> , CL<sub>1-5</sub> CL<sub>1-5</sub> - F<sub>4</sub> , L - 6(ATCC, Manassas, VA),  
 - 3(Chemicon, Temecula, CA) - 6(BQ16; Acell Co., Bayport, MN) mur  
 L - 6, - 3 - 6  
 FACStar(Becton - Dickinson, Mountain view, CA )

(Statistical Analysis)

Iyer, V.R. et al.(1999) Science 283: 83 - 87  
 , Tamayo P. et al.(1999)가 Proc. Natl. Acad. Sci. USA 96:29.7 - 2  
 912 (SOMs)  
 . SOM

가 (variance) (ANOVA )  
 . 3 2 ANOVA (Excel, Microsoft, Tai  
 wan)

(results)

4 , CL<sub>1-0</sub> , CL<sub>1-1</sub> , CL<sub>1-5</sub> CL<sub>1-5</sub> - F<sub>4</sub> .  
 530; CL<sub>1-5</sub> - F<sub>4</sub>:4115 ± 507 4 CL<sub>1-0</sub> :202 ± 16; CL<sub>1-1</sub> ;1491 ± 202; CL<sub>1-5</sub> :3865 ±  
 1 > CL<sub>1-0</sub> CL<sub>1-5</sub> - F<sub>4</sub> CL<sub>1-5</sub> > CL<sub>1-</sub>

4 가 in vivo 가 . 4  
 가 가 (pseudostratified columnar epithelium) . CL<sub>1-0</sub>  
 control rat) 가 CL<sub>1-5</sub> ( .  
 가 . 3 3  
 . CL<sub>1-0</sub> , CL<sub>1-1</sub> CL<sub>1-5</sub> 0.0, 0.7 ± 0.5  
 4.0 ± 2.0 (ANOVA : =0.05, P=0.0133).

mRNA 9,600

, AXL 가 .

9,600 - 가 , 4  
 . 9,600 , 8,525 가  
 가 100  
 , (scale value), -1 +1 , 0 +2 . 4 (No.1 - No.4,  
 1a ) 가 . 4 61, 50, 67, 99  
 1a ) 4 (No.5 - No.8,  
 110, 68, 71, 63 (277  
 312 ) (average linkage method)

5  
 ( , , AXL, L6, I - B, RTP) 5  
 ( , EST - T40480, EST - T70568, EST - R16261, EST - N20320, EST - T52774)  
 10 10 (CL<sub>1-5</sub> - F<sub>4</sub>)  
 가 . 5 ( , I , TFIID I, Dna  
 J 40, 2, 가 VEGF )  
 (EST - H04819) , 6  
 . 6 (CL<sub>1-0</sub>)  
 GAPDH G

L - 6, -3 -6 , 4 CL<sub>1</sub> , 3 ,  
 3 3.3±0.64 ( ). L6  
 , 가 CL<sub>1-0</sub> (18±10.0) CL<sub>1-5</sub> - F<sub>4</sub> (233±36.9)  
 , CL<sub>1-0</sub> CL<sub>1-5</sub> - F<sub>4</sub> 12.94 . -3 CL<sub>1-0</sub> (3  
 ±0.6) CL<sub>1-5</sub> - F<sub>4</sub> (49±17.3) 16.33 . -6  
 CL<sub>1-0</sub> (14±2.8) CL<sub>1-5</sub> - F<sub>4</sub> (53±21.7) 3.79 .

가

가 , 가

(57)

1.



1 I / II (abundance) ;  
2 ;

1 2 ,

가 .

2.

1 I / II (abundance) ;  
2 ;  
3 ;

1 2 3 ,

1

가 .

3.

2 ,

1 2 1 3 가 , 1  
가 .

4.

1 2 ,

I / II 10 가 .

5.

4 ,

I 10 가 .

6.

1 2 ,

0), DnaJ , EST - T70568, EST - N20320, EST - T52774, I (W1921  
40(A08517) 2(R40253)  
가 .

7.

I / II 2 mRNA  
;

mRNA; (2)

(1) I / II  
가 ,

가 .

8.

7 ,

I 50% 가

9.

8 ,

I 80% 가

10.

7 ,

II 20% 가

11.

9 ,

(Euclidean distance) 가 가

12.

9 ,

가 가 .

13.

9 ,

가 .

14.

9 ,

가 .

15.

14 ,

.02(lung adenocarcinoma cell.02) 가 .

16.

;

mRNA

;

;

,

,

I / II

,

.

17.

16 ,

I

50%

.

18.

16 ,

(biopsy)

.

19.

16 ,

.

20.

19 ,

mRNA

21.

;

;

;

,

I / II

,

.

22.

21 ,

I

50%

.

23.

22 ,

I

80%

.

24.

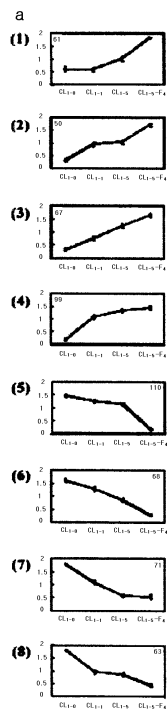
21 ,

II

20%

.

자기 조직화 지도



1 계층적 클러스터링

