

ПРИЛОЖЕНИЕ

Микурова А.В., Новикова С.Е., Скворцов В.С., Алексейчук Н.Н., Рыбина А.В., Мирошниченко Ю.В., Степень покрытия аминокислотной последовательности при использовании различных методов анализа масс-спектрометрических данных, полученных на модельных белках, Биомедицинская химия, 2017, том: 63(5), 397-404. DOI: 10.18097/PBMC20176305397

Таблица 1. Сравнение покрытия аминокислотной последовательности при различных установках «точности совпадения» (фрагмент для результатов, полученных программой NOVOR).

		O00194	P00167	P22830	Q13485
Длина (Uniprot)		218	134	423	552
Вариант с пересекающимися частями					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	99	44	103	60
	0,1	108	44	105	69
	0,02	128	50	114	107
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	112	47	116	84
	5	128	50	114	107
	1	92	46	112	62
Пептиды «как есть»					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	130	57	141	119
	0,1	128	58	146	97
	0,02	134	56	145	120
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	131	56	148	112
	5	134	56	145	120
	1	137	56	150	119

Таблица 2. Сравнение покрытия аминокислотной последовательности при различных установках «точности совпадения» (фрагмент для результатов, полученных программой PEAKS).

		O00194	P00167	P22830	Q13485
Длина (Uniprot)		218	134	423	552
Вариант с пересекающимися частями					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	99	37	121	62
	0,1	143	69	154	183
	0,02	174	86	126	123
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	190	77	182	201
	5	174	86	126	123
	1	184	66	176	170
Пептиды «как есть»					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	112	41	115	96
	0,1	164	73	170	222
	0,02	194	80	206	240
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	179	83	210	258
	5	194	80	206	240
	1	178	82	189	233

Таблица 3. Сравнение покрытия аминокислотной последовательности при различных установках «точности совпадения» (фрагмент для результатов, полученных программой MASCOT).

		O00194	P00167	P22830	Q13485
Длина (Uniprot)		218	134	423	552
Вариант с пересекающимися частями					
«MS/MS-tolerance», Да («peptide tolerance» 5 ppm)	0,5	298	100	185	246
	0,1	324	115	203	284
	0,02	159	116	256	508
«peptide tolerance», ppm («MS/MS-tolerance», 0,02 Да)	10	204	116	310	486
	5	159	116	256	508
	1	203	105	246	491
Пептиды «как есть»					
«MS/MS-tolerance», Да («peptide tolerance» 5 ppm)	0,5	492	115	202	351
	0,1	538	130	214	410
	0,02	210	125	384	522
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	216	130	347	525
	5	210	125	384	522
	1	207	123	324	518

Таблица 4. Сравнение покрытия аминокислотной последовательности при различных установках «точности совпадения» (фрагмент для результатов, полученных программой X!Tandem).

		O00194	P00167	P22830	Q13485
Длина (Uniprot)		218	134	423	552
Вариант с пересекающимися частями					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	190	68	207	413
	0,1	196	86	199	436
	0,02	197	92	277	440
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	197	92	286	310
	5	197	92	277	440
	1	196	92	289	396
Пептиды «как есть»					
«MS/MS-tolerance», Да («peptide tolerance» 5 м.д.)	0,5	197	86	308	506
	0,1	205	123	319	512
	0,02	207	123	319	524
«peptide tolerance», м.д. («MS/MS-tolerance», 0,02 Да)	10	207	123	319	530
	5	207	123	319	524
	1	207	123	305	506

Таблица 5. Список белков, идентифицированных посредством поиска и *de novo* секвенирования

Белок	Описание	Организм	Ген	Покрытие белка, %: указан соответствующий фермент				Покрытие белка, %: фермент не указан				
				Mascot	X!Tandem	Peaks	Novor	Mascot	X!Tandem	Peaks	Novor	PepNovo+
P00167	Cytochrome b5	<i>Homo sapiens</i>	CYB5A	64	92	34	22	93	92	77	37	37
P22830	Ferrochelatase, mitochondrial	<i>Homo sapiens</i>	FECH	73	73	19	18	92	73	30	27	15
O00194	Ras-related protein Rab-27B	<i>Homo sapiens</i>	RAB27B	87	96	70	39	96	95	80	59	30
Q13485	Mothers against decapentaplegic homolog 4	<i>Homo sapiens</i>	SMAD4	38	86	12	7	92	90	22	19	11
P0DH99	Elongation factor 1-alpha 1	<i>Arabidopsis thaliana</i>	AI1				3				3	
P02763	Alpha-1-acid glycoprotein 1	<i>Homo sapiens</i>	A1AG1					23	16			
P19652	Alpha-1-acid glycoprotein 2	<i>Homo sapiens</i>	A1AG2					19	13			
P04217	Alpha-1B-glycoprotein	<i>Homo sapiens</i>	A1BG					13	6			
P01023	Alpha-2-macroglobulin	<i>Homo sapiens</i>	A2MG					31	19			
P01011	Alpha-1-antichymotrypsin	<i>Homo sapiens</i>	AACT						4			
Q8GW96	AAA-ATPase At2g18193	<i>Arabidopsis thaliana</i>	AATP3		5							
Q9LK64	ABC transporter C family member 3	<i>Arabidopsis thaliana</i>	AB3C		2							
Q9STT6	ABC transporter A family member 6	<i>Arabidopsis thaliana</i>	AB6A						5			
O81108	Calcium-transporting ATPase 2, plasma membrane-type	<i>Arabidopsis thaliana</i>	ACA2						2			
P24182	Biotin carboxylase	<i>Escherichia coli</i>	ACCC	3	3			15	3			
O80963	Serine/threonine-protein kinase-like protein CCR2	<i>Arabidopsis thaliana</i>	ACCR2		2							
P0AFG8	Pyruvate dehydrogenase E1 component	<i>Escherichia coli</i>	ACEE	5	7			4				
Q9UGM1	Neuronal acetylcholine receptor subunit alpha-9	<i>Homo sapiens</i>	ACHA9						5			
Q07001	Acetylcholine receptor subunit delta	<i>Homo sapiens</i>	ACHD		3							
P0A6A8	Acyl carrier protein	<i>Escherichia coli</i>	acpP	10								
P0CJ46	Actin-1	<i>Arabidopsis thaliana</i>	ACT1		12				14			
P53494	Actin-4	<i>Arabidopsis thaliana</i>	ACT4		20				23			
P53492	Actin-7	<i>Arabidopsis thaliana</i>	ACT7						15			
P68133	Actin, alpha skeletal muscle	<i>Homo sapiens</i>	ACTA1	56	33			66	36		4	
P62736	Actin, aortic smooth muscle	<i>Homo sapiens</i>	ACTA2	49	45			69	52		4	
P60709	Actin, cytoplasmic 1	<i>Homo sapiens</i>	ACTB	26	34			44	35		4	
Q562R1	Beta-actin-like protein 2	<i>Homo sapiens</i>	ACTBL2								4	
P68032	Actin, alpha cardiac muscle 1	<i>Homo sapiens</i>	ACTC1	61				72			4	
P63261	Actin, cytoplasmic 2	<i>Homo sapiens</i>	ACTG1		34						4	
P63267	Actin, gamma-enteric smooth muscle	<i>Homo sapiens</i>	ACTG2								4	
P35609	Alpha-actinin-2	<i>Homo sapiens</i>	ACTN2		4			7	4			
Q9H2P0	Activity-dependent neuroprotector homeobox protein	<i>Homo sapiens</i>	ADNP		1							
P02765	Alpha-2-HS-glycoprotein	<i>Homo sapiens</i>	AHSG					25	16			
P33224	Putative acyl-CoA dehydrogenase AidB	<i>Escherichia coli</i>	aidB	4								
Q12802	A-kinase anchor protein 13	<i>Homo sapiens</i>	AKAP13					7				
P98204	Phospholipid-transporting ATPase 1	<i>Arabidopsis thaliana</i>	ALA1						1			
P02768	Serum albumin	<i>Homo sapiens</i>	ALBU	8	8			49	38	11		
P04075	Fructose-bisphosphate aldolase A	<i>Homo sapiens</i>	ALDOA		20				14			
P09972	Fructose-bisphosphate aldolase C	<i>Homo sapiens</i>	ALDOC		4							
Q96BT7	Alkylated DNA repair protein alkB homolog 8	<i>Homo sapiens</i>	ALKBH8	2								
Q6XPT5	Metacaspase-7	<i>Arabidopsis thaliana</i>	AMC7	15								
P23109	AMP deaminase 1	<i>Homo sapiens</i>	AMPD1	2								
Q6UB99	Ankyrin repeat domain-containing protein 11	<i>Homo sapiens</i>	ANR11		1							
P01008	Antithrombin-III	<i>Homo sapiens</i>	ANT3					18	7			
Q10567	AP-1 complex subunit beta-1	<i>Homo sapiens</i>	APIB1		3							
P08519	Apolipoprotein(a)	<i>Homo sapiens</i>	APOA					18	7			

P02647	Apolipoprotein A-I	<i>Homo sapiens</i>	APOA1					80	79			
P02652	Apolipoprotein A-II	<i>Homo sapiens</i>	APOA2					49	44			
P06727	Apolipoprotein A-IV	<i>Homo sapiens</i>	APOA4					33	24			
P04114	Apolipoprotein B-100	<i>Homo sapiens</i>	APOB					21	8			
P02654	Apolipoprotein C-I	<i>Homo sapiens</i>	APOC1					52	25			
P02656	Apolipoprotein C-III	<i>Homo sapiens</i>	APOC3					53	16			
P05090	Apolipoprotein D	<i>Homo sapiens</i>	APOD					10	7			
P02649	Apolipoprotein E	<i>Homo sapiens</i>	APOE					44	38			
P02749	Beta-2-glycoprotein 1	<i>Homo sapiens</i>	APOH					5				
Q14791	Apolipoprotein L1	<i>Homo sapiens</i>	APOL1					14	14			
P06960	Ornithine carbamoyltransferase subunit F	<i>Escherichia coli</i>	argF	12								
Q9NVT9	Armadillo repeat-containing protein 1	<i>Homo sapiens</i>	ARMC1						3			
P77398	Bifunctional polymyxin resistance protein ArnA	<i>Escherichia coli</i>	ARNA	52	50			61	49	2		3
P59998	Actin-related protein 2/3 complex subunit 4	<i>Homo sapiens</i>	ARPC4						11			
P22106	Asparagine synthetase B [glutamine-hydrolyzing]	<i>Escherichia coli</i>	ASNB		3				3			
Q9R4J4	Peptidyl-Asp metalloendopeptidase (Fragments)	<i>Pseudomonas fragi</i>	ASPN	6	55	22		64	49	24	9	
O64668	Presenilin-like protein At1g08700	<i>Arabidopsis thaliana</i>	At1g08700	18								
O04291	Homeobox-leucine zipper protein ATHB-14	<i>Arabidopsis thaliana</i>	ATHB-14	6								
P0ABB0	ATP synthase subunit alpha	<i>Escherichia coli</i>	ATPA	2				2				
P0ABB4	ATP synthase subunit beta	<i>Escherichia coli</i>	atpD	4								
Q8GXG6	Hydroxyproline O-galactosyltransferase GALT4	<i>Arabidopsis thaliana</i>	B3GTH						6			
Q9LUK7	Transcription factor bHLH28	<i>Arabidopsis thaliana</i>	BH028		1							
A8MY62	Putative beta-lactamase-like 1	<i>Homo sapiens</i>	BLML		10							
Q96Q07-3	Isoform 3 of BTB/POZ domain-containing protein 9	<i>Homo sapiens</i>	BTBD9	5								
P01024	Complement C3	<i>Homo sapiens</i>	C3					43	33			
P0C0L4	Complement C4-A	<i>Homo sapiens</i>	C4A					20	9			
P0C0L5	Complement C4-B	<i>Homo sapiens</i>	C4B					21				
Q9LHA1	Cytochrome P450 81D11	<i>Arabidopsis thaliana</i>	C8D11		2							
P22223	Cadherin-3	<i>Homo sapiens</i>	CADH3						2			
Q13555	Calcium/calmodulin-dependent protein kinase type II subunit gamma	<i>Homo sapiens</i>	CAMK2G	8								
P00864	Phosphoenolpyruvate carboxylase	<i>Escherichia coli</i>	CAPP		8				7			
Q8WXQ8	Carboxypeptidase A5	<i>Homo sapiens</i>	CBPA5						4			
Q02224	Centromere-associated protein E	<i>Homo sapiens</i>	CEN	1								
P00450	Ceruloplasmin	<i>Homo sapiens</i>	CERU					11	10			
P00751	Complement factor B	<i>Homo sapiens</i>	CFAB					18	3			
C5A1D5	60 kDa chaperonin	<i>Escherichia coli</i>	CH60		3							
Q13231	Chitotriosidase-1	<i>Homo sapiens</i>	CHIT1		5							
Q9ZUV9	Cation/H(+) antiporter 7	<i>Arabidopsis thaliana</i>	CHX7	5								
P30622	CAP-Gly domain-containing linker protein 1	<i>Homo sapiens</i>	CLIP1	3								
P0ABH9	ATP-dependent Clp protease ATP-binding subunit ClpA	<i>Escherichia coli</i>	CLPA					8	1			
P63284	Chaperone protein ClpB	<i>Escherichia coli</i>	clpB	3								
P42730	Chaperone protein ClpB1	<i>Arabidopsis thaliana</i>	CLPB1						3			
P10909	Clusterin	<i>Homo sapiens</i>	CLUS						9			
Q7Z7A1	Centriolin	<i>Homo sapiens</i>	CNTRL	0								
P01031	Complement C5	<i>Homo sapiens</i>	CO5					2	1			
P12110-3	Isoform 2C2A' of Collagen alpha-2(VI) chain	<i>Homo sapiens</i>	CO6A2		2							
Q5TAT6	Collagen alpha-1(XIII) chain	<i>Homo sapiens</i>	COL13A1						2			
Q7Z3J2	UPF0505 protein C16orf62	<i>Homo sapiens</i>	CP062		4							
Q8GUU3	Cleavage and polyadenylation specificity factor subunit 3-II	<i>Arabidopsis thaliana</i>	CPSF73-II	3								

P0ACJ8	cAMP-activated global transcriptional regulator CRP	<i>Escherichia coli</i>	CRP	56	46			56	46		
Q9LRL2	Putative cysteine-rich repeat secretory protein 25	<i>Arabidopsis thaliana</i>	CRRSP25	15							
Q9ZQB9	Probable xyloglucan glycosyltransferase 12	<i>Arabidopsis thaliana</i>	CSLC12					19			
Q9H1P6	Uncharacterized protein C20orf85	<i>Homo sapiens</i>	CT085		15						
Q6NSI4	Uncharacterized protein CXorf57	<i>Homo sapiens</i>	CXorf57	3							
Q9P0U4	CXXC1_HUMAN CXXC-type zinc finger protein 1	<i>Homo sapiens</i>	CXXC1						8		
P0ABJ9	Cytochrome bd-I ubiquinol oxidase subunit 1	<i>Escherichia coli</i>	CYDA	4	3			9	4		
P0ABJ1	Cytochrome bo(3) ubiquinol oxidase subunit 2	<i>Escherichia coli</i>	CYOA	12	4			12	4		
P0ABI8	Cytochrome bo(3) ubiquinol oxidase subunit 1	<i>Escherichia coli</i>	CYOB	2	2			6	1		
P33261	Cytochrome P450 2C19	<i>Homo sapiens</i>	CYP2C19					13			
P10632	Cytochrome P450 2C8	<i>Homo sapiens</i>	CYP2C8					13			
P11712	Cytochrome P450 2C9	<i>Homo sapiens</i>	CYP2C9	26	12			20	2		
O48845	Cytochrome b5 isoform B	<i>Arabidopsis thaliana</i>	CYTB5-B								10
P81605	Dermcidin	<i>Homo sapiens</i>	DCD						38		
Q16531	DNA damage-binding protein 1	<i>Homo sapiens</i>	DDB1						1		
P60981	Destrin	<i>Homo sapiens</i>	DEST		15				15		
Q9FNQ1	DEXH-box ATP-dependent RNA helicase DEXH14	<i>Arabidopsis thaliana</i>	DEXHE						0		
O95886	Disks large-associated protein 3	<i>Homo sapiens</i>	DLGP3						1		
B11RF9	Chaperone protein DnaJ	<i>Escherichia coli</i>	DNAJ	5				14			
P0A6Y8	Chaperone protein DnaK	<i>Escherichia coli</i>	DNAK	65	61			71	55		2
Q8LF21	Dynamamin-related protein 1C	<i>Arabidopsis thaliana</i>	DRPIC		2						
Q14204	Cytoplasmic dynein 1 heavy chain 1	<i>Homo sapiens</i>	DYHC1		0						
Q05VTE0	Putative elongation factor 1-alpha-like 3	<i>Homo sapiens</i>	EEF1A1P5	11			3	11			3
Q05639	Elongation factor 1-alpha 2	<i>Homo sapiens</i>	EEF1A2				3	20			3
Q7L9B9	Endonuclease/exonuclease/phosphatase family domain-containing protein 1	<i>Homo sapiens</i>	EEPDI						2		
P68104	Elongation factor 1-alpha 1	<i>Homo sapiens</i>	EF1A1		9		3		9		3
Q84WM9	Elongation factor 1-beta 1	<i>Arabidopsis thaliana</i>	EF1B1		4						
P17813	Endoglin	<i>Homo sapiens</i>	ENG	9							
P06733	Alpha-enolase	<i>Homo sapiens</i>	ENO1	7	9			41	13		5
P09104	Gamma-enolase	<i>Homo sapiens</i>	ENO2								4
P13929	Beta-enolase	<i>Homo sapiens</i>	ENO3								4
P54756	Ephrin type-A receptor 5	<i>Homo sapiens</i>	EPHA5						1		
P0CB39	Phosphoethanolamine transferase EptC	<i>Escherichia coli</i>	EPTC	14	5			7	3		
P60508	Syncytin-2	<i>Homo sapiens</i>	ERVFRD-1					7			
P0A9W3	Energy-dependent translational throttle protein EttA	<i>Escherichia coli</i>	ETTA	2	8			5	2		
Q9NV70	Exocyst complex component 1	<i>Homo sapiens</i>	EXOC1	7							
P02671	Fibrinogen alpha chain	<i>Homo sapiens</i>	FGA					33	39		
P02679	Fibrinogen gamma chain	<i>Homo sapiens</i>	FGG					32	32		
P02675	Fibrinogen beta chain	<i>Homo sapiens</i>	FIBB					38	32		
P02751	Fibronectin	<i>Homo sapiens</i>	FINC						2		
P00363	Fumarate reductase flavoprotein subunit	<i>Escherichia coli</i>	frdA	7	5						
P0A8Q3	Fumarate reductase subunit D	<i>Escherichia coli</i>	frdD	7							
B1J086	S-formylglutathione hydrolase FrmB	<i>Escherichia coli</i>	frmB	28							
P0AAI3	ATP-dependent zinc metalloprotease FtsH	<i>Escherichia coli</i>	FTSH	4	2			6	2		
P0AC30	Cell division protein FtsX	<i>Escherichia coli</i>	ftsX	3							
P0A9A9	Ferric uptake regulation protein	<i>Escherichia coli</i>	FUR	70	88			70	70		
P0A6M8	Elongation factor G	<i>Escherichia coli</i>	FUSA	6	4			6	4		
P0AC53	Glucose-6-phosphate 1-dehydrogenase	<i>Escherichia coli</i>	G6PD	4	4			4			
P0AEP1	Galactose-proton symporter	<i>Escherichia coli</i>	GALP	2	2			14	2		
Q5E924	Glyceraldehyde-3-phosphate dehydrogenase GAPCP2, chloroplastic	<i>Arabidopsis thaliana</i>	GAPCP2						3		

P04406	Glyceraldehyde-3-phosphate dehydrogenase	<i>Homo sapiens</i>	GAPDH	7	8			20	9		
P69813	PTS system galactitol-specific EIIA component	<i>Escherichia coli</i>	GATA	39				39			
P0A9S3	Galactitol-1-phosphate 5-dehydrogenase	<i>Escherichia coli</i>	gatD	3							
Q0TFZ6	D-tagatose-1,6-bisphosphate aldolase subunit GatY	<i>Escherichia coli</i>	GATY					30			
POC8J8	D-tagatose-1,6-bisphosphate aldolase subunit GatZ	<i>Escherichia coli</i>	GATZ	21	34			25	34		
Q93YV0	(E,E)-geranylinalool synthase	<i>Arabidopsis thaliana</i>	GES						1		
P30047	GTP cyclohydrolase 1 feedback regulatory protein	<i>Homo sapiens</i>	GFRP		43						
P0A9S5	Glycerol dehydrogenase	<i>Escherichia coli</i>	GLDA	29	42			45	25		
P0A6U8	Glycogen synthase	<i>Escherichia coli</i>	GLGA	11	4				2		
P10070	Zinc finger protein GLI2	<i>Homo sapiens</i>	GLI2						1		
P17169	Glutamine--fructose-6-phosphate aminotransferase [isomerizing]	<i>Escherichia coli</i>	GLMS	73	73	4	3	75	73		4
B11X65	Glutamate--tRNA ligase	<i>Escherichia coli</i>	GLTX					10			
Q3T8J9	GON-4-like protein	<i>Homo sapiens</i>	GON4L	1							
P68066	Autonomous glycy radical cofactor	<i>Escherichia coli</i>	GRCA	75	44			42	35		
P0A6F5	60 kDa chaperonin	<i>Escherichia coli</i>	groL	5							
Q9FF12	Flavin-containing monooxygenase FMO GS-OX-like 9	<i>Arabidopsis thaliana</i>	GSXL9						7		
Q9LK27	Transcription factor GTE8	<i>Arabidopsis thaliana</i>	GTE8		4						
Q96GX5	Serine/threonine-protein kinase greatwall	<i>Homo sapiens</i>	GWL		4						
P0AES6	DNA gyrase subunit B	<i>Escherichia coli</i>	gyrB	3							
P04908	Histone H2A type 1-B/E	<i>Homo sapiens</i>	H2A1B		22				22		
Q16836	Hydroxyacyl-coenzyme A dehydrogenase, mitochondrial	<i>Homo sapiens</i>	HADH	6							
P0ACB7	Protein HemY	<i>Escherichia coli</i>	HEMY	7	7			10			
Q15034	Probable E3 ubiquitin-protein ligase HERC3	<i>Homo sapiens</i>	HERC3		2						
O14964	Hepatocyte growth factor-regulated tyrosine kinase substrate	<i>Homo sapiens</i>	HGS						2		
P0ACE7	Purine nucleoside phosphoramidase	<i>Escherichia coli</i>	HINT	10	11			10	11		
Q0TEX1	Histidine--tRNA ligase	<i>Escherichia coli</i>	hisS	3							
P0C0S8	Histone H2A type 1	<i>Homo sapiens</i>	HIST1H2AG	29				29			
Q9S7J8	Copper-transporting ATPase RAN1	<i>Arabidopsis thaliana</i>	HMA7		2						
P22626	Heterogeneous nuclear ribonucleoproteins A2/B1	<i>Homo sapiens</i>	HNRNPA2B1					16	11		
P00738	Haptoglobin	<i>Homo sapiens</i>	HPT						14		
P02790	Hemopexin	<i>Homo sapiens</i>	HPX					23	20		
P61604	10 kDa heat shock protein, mitochondrial	<i>Homo sapiens</i>	HS1	14	14			14	14		13
P0A6H5	ATP-dependent protease ATPase subunit HslU	<i>Escherichia coli</i>	HSLU	11	9				7		
F4HQD4	Heat shock 70 kDa protein 15	<i>Arabidopsis thaliana</i>	HSP7P						1		
S4R3N1	Protein HSPE1-MOB4	<i>Homo sapiens</i>	HSPE1-MOB4								5
Q7Z6Z7	E3 ubiquitin-protein ligase HUWE1	<i>Homo sapiens</i>	HUWE1	0					1		
A0A0C4DH34	Immunoglobulin heavy variable 4-28	<i>Homo sapiens</i>	HV428					8	19		
P0ACE0	Hydrogenase-2 large chain	<i>Escherichia coli</i>	hybC	4							
P69741	Hydrogenase-2 small chain	<i>Escherichia coli</i>	hybO	3							
P0AAN3	Hydrogenase isoenzymes nickel incorporation protein HypB	<i>Escherichia coli</i>	HYPB	3	8						
Q02363	DNA-binding protein inhibitor ID-2	<i>Homo sapiens</i>	ID2		7						
P01876	Ig alpha-1 chain C region	<i>Homo sapiens</i>	IGHA1					24	24		
P01857	Ig gamma-1 chain C region	<i>Homo sapiens</i>	IGHG1					49	29		
P01859	Ig gamma-2 chain C region	<i>Homo sapiens</i>	IGHG2					31	14		
P01871	Ig mu chain C region	<i>Homo sapiens</i>	IGHM					29	22		
A0A0C4DH38	Immunoglobulin heavy variable 5-51	<i>Homo sapiens</i>	IGHV5-51					36	10		
P01591	Immunoglobulin J chain	<i>Homo sapiens</i>	IGJ					12	12		
P01834	Ig kappa chain C region	<i>Homo sapiens</i>	IGKC	32	32			70	65		

B9A064	Immunoglobulin lambda-like polypeptide 5	<i>Homo sapiens</i>	IGLL5					23				
P0A6Y1	Integration host factor subunit beta	<i>Escherichia coli</i>	IHFB					13	13			
Q9BZV3	Interphotoreceptor matrix proteoglycan 2	<i>Homo sapiens</i>	IMPG2	5								
Q9NVR2	Integrator complex subunit 10	<i>Homo sapiens</i>	INT10			1						
P46940	Ras GTPase-activating-like protein IQGAP1	<i>Homo sapiens</i>	IQGAP1					6	0			
P19827	Inter-alpha-trypsin inhibitor heavy chain H1	<i>Homo sapiens</i>	ITIH1					6	4			
P19823	Inter-alpha-trypsin inhibitor heavy chain H2	<i>Homo sapiens</i>	ITIH2					11	6			
Q14624	Inter-alpha-trypsin inhibitor heavy chain H4	<i>Homo sapiens</i>	ITIH4					12	12			
P13645	Keratin, type I cytoskeletal 10	<i>Homo sapiens</i>	K1C10	13	8			28	17			
P04259	Keratin, type II cytoskeletal 6B	<i>Homo sapiens</i>	K2C6B						3			
A0AUZ9-3	Isoform 3 of KAT8 regulatory NSL complex subunit 1-like protein	<i>Homo sapiens</i>	KAL1L						2			
P13029	Catalase-peroxidase	<i>Escherichia coli</i>	KATG	3	7			3	3			
Q8L7R2	Homoserine kinase	<i>Arabidopsis thaliana</i>	KHSE						3			
Q4FZB7	Histone-lysine N-methyltransferase KMT5B	<i>Homo sapiens</i>	KMT5B			1						
P01042-3	Isoform 3 of Kininogen-1	<i>Homo sapiens</i>	KNG1					22	7			
P0AD61	Pyruvate kinase I	<i>Escherichia coli</i>	KPYK1			3						
P04264	Keratin, type II cytoskeletal 1	<i>Homo sapiens</i>	KRT1	27	30			56	36			
P02533	Keratin, type I cytoskeletal 14	<i>Homo sapiens</i>	KRT14	9								
Q7Z3Y7	Keratin, type I cytoskeletal 28	<i>Homo sapiens</i>	KRT28	3								
P35527	Keratin, type I cytoskeletal 9	<i>Homo sapiens</i>	KRT9	19	18			39	26			
Q9LMH0	Protein KTI12 homolog	<i>Arabidopsis thaliana</i>	KTI12			11						
P01619	Immunoglobulin kappa variable 3-20	<i>Homo sapiens</i>	KV320					37	23			
P0CG04	Ig lambda-1 chain C regions	<i>Homo sapiens</i>	LAC1						41			
P0CG05	Ig lambda-2 chain C regions	<i>Homo sapiens</i>	LAC2					67	57			
Q6ZV70	LanC-like protein 3	<i>Homo sapiens</i>	LANC3			5						
P0ACV4	Lipopolysaccharide assembly protein A	<i>Escherichia coli</i>	LAPA	13					13			
P18428	Lipopolysaccharide-binding protein	<i>Homo sapiens</i>	LBP						7			
P00338	L-lactate dehydrogenase A chain	<i>Homo sapiens</i>	LDHA	6	6				6			
P0AB38	Penicillin-binding protein activator LpoB	<i>Escherichia coli</i>	LPOB	6	6			29	6			
Q9Y2L9	Leucine-rich repeat and calponin homology domain-containing protein 1	<i>Homo sapiens</i>	LRCH1			2						
F4HQ22	LEAF RUST 10 DISEASE-RESISTANCE LOCUS RECEPTOR-LIKE PROTEIN KINASE-like 2.4	<i>Arabidopsis thaliana</i>	LRL24			1						
Q12912	Lymphoid-restricted membrane protein	<i>Homo sapiens</i>	LRMP			1						
P01701	Immunoglobulin lambda variable 1-51	<i>Homo sapiens</i>	LV151						21			
Q7M135	Lysyl endopeptidase	<i>Lysobacter enzymogenes</i>	LYSC	42	28			65	48			
P61626	Lysozyme C	<i>Homo sapiens</i>	LYZ	13	13			13	13			
O43318-3	Isoform 1C of Mitogen-activated protein kinase kinase kinase 7	<i>Homo sapiens</i>	MAP3K7	6								
P56784	Maturase K	<i>Arabidopsis thaliana</i>	matK	1								
Q8H1B3	Probable mediator of RNA polymerase II transcription subunit 37b	<i>Arabidopsis thaliana</i>	MD37B						5			
P0AEY8	Multidrug transporter MdfA	<i>Escherichia coli</i>	MDFA						3			
F4K460	Mediator of RNA polymerase II transcription subunit 17	<i>Arabidopsis thaliana</i>	MED17			2						
Q13503	Mediator of RNA polymerase II transcription subunit 21	<i>Homo sapiens</i>	MED21					6				
P13009	Methionine synthase	<i>Escherichia coli</i>	metH	1								
P0A817	S-adenosylmethionine synthase	<i>Escherichia coli</i>	metK	4								
Q5XKP0	MIC complex subunit MIC13	<i>Homo sapiens</i>	MIC13	19	19							
Q8VZG8	MDIS1-interacting receptor like kinase 2	<i>Arabidopsis thaliana</i>	MIK2	3								
P51512	Matrix metalloproteinase-16	<i>Homo sapiens</i>	MMP16						1			
Q99550	M-phase phosphoprotein 9	<i>Homo sapiens</i>	MPP9						2			

P0A9X4	Rod shape-determining protein MreB	<i>Escherichia coli</i>	MREB	11	4		4	4		
Q8NDA8	Maestro heat-like repeat-containing protein family member 1	<i>Homo sapiens</i>	MROH1	1						
Q68CQ1	Maestro heat-like repeat-containing protein family member 7	<i>Homo sapiens</i>	MROH7	2						
P0A749	UDP-N-acetylglucosamine 1-carboxyvinyltransferase	<i>Escherichia coli</i>	MURA	8	6		14			
P14900	UDP-N-acetylmuramoylalanine--D-glutamate ligase	<i>Escherichia coli</i>	MURD					3		
Q9ZTC3	Transcription factor MYB90	<i>Arabidopsis thaliana</i>	MYB90		11					
P12882	Myosin-1	<i>Homo sapiens</i>	MYH1				10			
P11055	Myosin-3	<i>Homo sapiens</i>	MYH3		1		8	1		
Q9Y623	MYH4_HUMAN Myosin-4	<i>Homo sapiens</i>	MYH4	2			19			
P12883	Myosin-7	<i>Homo sapiens</i>	MYH7				12			
P05976	Myosin light chain 1/3, skeletal muscle isoform	<i>Homo sapiens</i>	MYL1	14						
Q96A32	Myosin regulatory light chain 2, skeletal muscle isoform	<i>Homo sapiens</i>	MYLPP	16	11		11	11		
Q9Y4I1	Unconventional myosin-Va	<i>Homo sapiens</i>	MYO5A					2		
P15173	Myogenin	<i>Homo sapiens</i>	MYOG					16		
P75949	Beta-hexosaminidase	<i>Escherichia coli</i>	NAGZ	3	3					
Q3E7D0	Nucleobase-ascorbate transporter 12	<i>Arabidopsis thaliana</i>	NAT12	9						
Q95803-3	Isoform 3 of Bifunctional heparan sulfate N-deacetylase/N-sulfotransferase 3	<i>Homo sapiens</i>	NDST3					7		
P31600	Bacteriophage adsorption protein A	<i>Escherichia coli</i>	NFRA		5					
P0A6Z6	Nickel-responsive regulator	<i>Escherichia coli</i>	NIKR	65	56		74	69		
P93002	Regulatory protein NPR1	<i>Arabidopsis thaliana</i>	NPR1				10			
P00452	Ribonucleoside-diphosphate reductase 1 subunit alpha	<i>Escherichia coli</i>	NRDA				9	1		
P28903	Anaerobic ribonucleoside-triphosphate reductase	<i>Escherichia coli</i>	NRDD	2	2					
F4I366	DNA-directed RNA polymerase I subunit 2	<i>Arabidopsis thaliana</i>	NRPA2		1					
Q96CM4	Nucleoredoxin-like protein 1	<i>Homo sapiens</i>	NXNL1	3	3					
Q9LVH5	Outer envelope protein 64, chloroplastic	<i>Arabidopsis thaliana</i>	OEP64	5						
Q9HC10	Otoferlin	<i>Homo sapiens</i>	OTOF				7			
Q95206	Protocadherin-8	<i>Homo sapiens</i>	PCDH8	1						
Q4V389	Pentatricopeptide repeat-containing protein At1g22830	<i>Arabidopsis thaliana</i>	PCMP-E24	7						
Q5VY43	Platelet endothelial aggregation receptor 1	<i>Homo sapiens</i>	PEAR1	1						
Q65090	Ribosomal RNA small subunit methyltransferase, chloroplastic	<i>Arabidopsis thaliana</i>	PFC1	14						
P09373	Formate acetyltransferase 1	<i>Escherichia coli</i>	PFLB	22	11		23	7		
P07737	Profilin-1	<i>Homo sapiens</i>	PFN1	10	10		10	10		10
Q96GW7	Brevican core protein	<i>Homo sapiens</i>	PGCB					5		
Q99623	Prohibitin-2	<i>Homo sapiens</i>	PHB2				6	6		
P0A9K7	Phosphate-specific transport system accessory protein PhoU	<i>Escherichia coli</i>	PHOU				31			
P14618	Pyruvate kinase PKM	<i>Homo sapiens</i>	PKM				22	16		
Q15111	Inactive phospholipase C-like protein 1	<i>Homo sapiens</i>	PLCL1	3						
P00747	Plasminogen	<i>Homo sapiens</i>	PLG				15	1		
Q43867	Pectinesterase 1	<i>Arabidopsis thaliana</i>	PME1					1		
Q9SGH4	Photosynthetic NDH subunit of lumenal location 3, chloroplastic	<i>Arabidopsis thaliana</i>	PNSL3		10					
Q6S8J3	POTE ankyrin domain family member E	<i>Homo sapiens</i>	POTEE							1
A5A3E0	POTE ankyrin domain family member F	<i>Homo sapiens</i>	POTEF	6	6			7		1
Q9BYX7	Putative beta-actin-like protein 3	<i>Homo sapiens</i>	POTEKP							4
P28069	Pituitary-specific positive transcription factor 1	<i>Homo sapiens</i>	POU1F1	3						
Q9SAJ5	Pentatricopeptide repeat-containing protein At1g79540	<i>Arabidopsis thaliana</i>	PP133		6					
Q49711	Pentatricopeptide repeat-containing protein At4g21880, mitochondrial	<i>Arabidopsis thaliana</i>	PP335		1					
Q9FGL1	Putative pentatricopeptide repeat-containing protein At5g47460	<i>Arabidopsis thaliana</i>	PP423					5		
Q0TAA4	Phosphoenolpyruvate carboxylase	<i>Escherichia coli</i>	PPC	18			19			
Q5VV67	Peroxisome proliferator-activated receptor gamma coactivator-related protein 1	<i>Homo sapiens</i>	PPRC1		1					

P10163	Basic salivary proline-rich protein 4	<i>Homo sapiens</i>	PRB4					11	4			
P48634	Protein PRRC2A	<i>Homo sapiens</i>	PRC2A		1							
P0C0L7	Proline/betaine transporter	<i>Escherichia coli</i>	proP	4								
Q6MZQ0	Proline-rich protein 5-like	<i>Homo sapiens</i>	PRR5L						2			
Q9Y6M0	Testisin	<i>Homo sapiens</i>	PRSS21					3				
P25787	Proteasome subunit alpha type-2	<i>Homo sapiens</i>	PSMA2	9	9			11	9			
Q9SUV2	Probable sugar phosphate/phosphate translocator At4g32390	<i>Arabidopsis thaliana</i>	PT432						12			
P69828	PTS system galactitol-specific EIIA component	<i>Escherichia coli</i>	PTKA		57				57			
Q9LSE8	Protein NRT1/ PTR FAMILY 4.2	<i>Arabidopsis thaliana</i>	PTR35		2							
Q00577	Transcriptional activator protein Pur-alpha	<i>Homo sapiens</i>	PURA		7							
Q6ZY51	Phosphoglucan, water dikinase, chloroplastic	<i>Arabidopsis thaliana</i>	PWD						1			
Q6IQ22	Ras-related protein Rab-12	<i>Homo sapiens</i>	RAB12		5							
Q92928	Putative Ras-related protein Rab-1C	<i>Homo sapiens</i>	RAB1C						20			
Q9H082	Ras-related protein Rab-33B	<i>Homo sapiens</i>	RAB33B	8								
Q5JT25	Ras-related protein Rab-41	<i>Homo sapiens</i>	RAB41					6	10			
P61018	Ras-related protein Rab-4B	<i>Homo sapiens</i>	RAB4B	10								
Q9L NK1	Ras-related protein RABA3	<i>Arabidopsis thaliana</i>	RABA3		5							
Q9CB01	Ras-related protein RABF1	<i>Arabidopsis thaliana</i>	RABF1	15								
Q5HY18	Rab-like protein 3	<i>Homo sapiens</i>	RABL3	5	5				5			
P51159	Ras-related protein Rab-27A	<i>Homo sapiens</i>	RB27A	16	32	10	10	40	29	15		
P0AG30	Transcription termination factor Rho	<i>Escherichia coli</i>	RHO	26	18			38	18			
P0A7J0	3,4-dihydroxy-2-butanone 4-phosphate synthase	<i>Escherichia coli</i>	RIBB	6	6			6				
Q9ZT07	G-type lectin S-receptor-like serine/threonine-protein kinase RKS1	<i>Arabidopsis thaliana</i>	RKS1		3					2		
P0A7J7	50S ribosomal protein L11	<i>Escherichia coli</i>	RL11						8			
P60422	50S ribosomal protein L2	<i>Escherichia coli</i>	RL2		23				23			
P61175	50S ribosomal protein L22	<i>Escherichia coli</i>	RL22		9							
P62399	50S ribosomal protein L5	<i>Escherichia coli</i>	RL5		14				11			
P42596	Ribosomal RNA large subunit methyltransferase G	<i>Escherichia coli</i>	RLMG		2							
Q01974	Tyrosine-protein kinase transmembrane receptor ROR2	<i>Homo sapiens</i>	ROR2		2							
Q0TCE4	50S ribosomal protein L2	<i>Escherichia coli</i>	RPLB	33				33				
Q0TCE1	50S ribosomal protein L3	<i>Escherichia coli</i>	rplC	5								
Q0TCF3	50S ribosomal protein L5	<i>Escherichia coli</i>	RPLE	14				11				
P0AG55	50S ribosomal protein L6	<i>Escherichia coli</i>	RPLF	19	19			19	19			
P0AA10	50S ribosomal protein L13	<i>Escherichia coli</i>	RPLM	21	9			9	9			
P0ADY3	50S ribosomal protein L14	<i>Escherichia coli</i>	rplN	28	44							
P0ADY7	50S ribosomal protein L16	<i>Escherichia coli</i>	rplP	10	10							
P0C018	50S ribosomal protein L18	<i>Escherichia coli</i>	rplR	26	8							
P0A7K6	50S ribosomal protein L19	<i>Escherichia coli</i>	rplS	12								
P0AG48	50S ribosomal protein L21	<i>Escherichia coli</i>	RPLU	21	21			10				
Q0TCE6	50S ribosomal protein L22	<i>Escherichia coli</i>	RPLV	20				20				
P0A7M2	50S ribosomal protein L28	<i>Escherichia coli</i>	rpmB	20	20							
P0A7Q1	50S ribosomal protein L35	<i>Escherichia coli</i>	rplM	18								
P0A8T7	DNA-directed RNA polymerase subunit beta'	<i>Escherichia coli</i>	RPOC	4	5			8	3			
Q9LX88	40S ribosomal protein S15a-4	<i>Arabidopsis thaliana</i>	RPS15AD					15				
P63220	40S ribosomal protein S21	<i>Homo sapiens</i>	RPS21				17	21	22			
P62266	40S ribosomal protein S23	<i>Homo sapiens</i>	RPS23						19			
P61247	40S ribosomal protein S3a	<i>Homo sapiens</i>	RPS3A	6	6			21	7			
P46782	40S ribosomal protein S5	<i>Homo sapiens</i>	RPS5	10								
P0A7V0	30S ribosomal protein S2	<i>Escherichia coli</i>	RPSB	63	43			32	37			
P0A7V3	30S ribosomal protein S3	<i>Escherichia coli</i>	RPSC	27	14			30	14			
P0A7V8	30S ribosomal protein S4	<i>Escherichia coli</i>	RPSD	8	8			6				

P0A7W1	30S ribosomal protein S5	<i>Escherichia coli</i>	RPSE	65	43		73	43			
P0A4D0	30S ribosomal protein S6	<i>Escherichia coli</i>	RPSF	22			8				
P0A7S3	30S ribosomal protein S12	<i>Escherichia coli</i>	RPSL	16	17		16	17			
P0ADZ4	30S ribosomal protein S15	<i>Escherichia coli</i>	RPSO	18	18		18	18			
P0A7T7	30S ribosomal protein S18	<i>Escherichia coli</i>	rpsR		16						
P0A7S9	30S ribosomal protein S13	<i>Escherichia coli</i>	RS13		10						
P62244	40S ribosomal protein S15a	<i>Homo sapiens</i>	RS15A					15			
P02358	30S ribosomal protein S6	<i>Escherichia coli</i>	RS6		38						
P0AFX4	Regulator of sigma D	<i>Escherichia coli</i>	RSD	13			23				
P0AA43	Ribosomal small subunit pseudouridine synthase A	<i>Escherichia coli</i>	RSUA	34	34		34	34			8
P35542	Serum amyloid A-4 protein	<i>Homo sapiens</i>	SAA4				44	8			
Q9UJQ4	Sal-like protein 4	<i>Homo sapiens</i>	SALL4		4						
P0AG90	Protein translocase subunit SecD	<i>Escherichia coli</i>	secD	1							
Q92854	Semaphorin-4D	<i>Homo sapiens</i>	SEM4D					1			
P01009	Alpha-1-antitrypsin	<i>Homo sapiens</i>	SERPINA1				48	24			
Q9ZNX9	RNA polymerase sigma factor sigE, chloroplast/mitochondrial	<i>Arabidopsis thaliana</i>	SIGE					2			
P0A9K9	FKBP-type peptidyl-prolyl cis-trans isomerase SlyD	<i>Escherichia coli</i>	SLYD	77	77	17	77	71	24	17	
Q5PRF9	Protein Smaug homolog 2	<i>Homo sapiens</i>	SMAG2					2			
O14512	Suppressor of cytokine signaling 7	<i>Homo sapiens</i>	SOCS7				2				
Q9T014	Protein SPA1-RELATED 2	<i>Arabidopsis thaliana</i>	SPA2				3				
Q56A73	Spindlin-4	<i>Homo sapiens</i>	SPIN4					10			
Q9BXG8	Spermatogenic leucine zipper protein 1	<i>Homo sapiens</i>	SPZ1					3			
P11831	Serum response factor	<i>Homo sapiens</i>	SRF				5	2			
P56580	PTS system glucitol/sorbitol-specific EIIB component	<i>Escherichia coli</i>	srIE	3							
Q6GI34	Glutamyl endopeptidase	<i>Staphylococcus aureus</i> (strain MRSA252)	SSPA	31	42		71	67			
P80644	FMN reductase	<i>Escherichia coli</i>	ssuE					8			
P78524-2	Isoform 2 of Suppression of tumorigenicity 5 protein	<i>Homo sapiens</i>	ST5		4			6			
Q8WXE9	Stonin-2	<i>Homo sapiens</i>	STON2		1						
Q7RTU9	Stereocilin	<i>Homo sapiens</i>	STRC					1			
P04805	Glutamate--tRNA ligase	<i>Escherichia coli</i>	SYE					2			
O15119	T-box transcription factor TBX3	<i>Homo sapiens</i>	TBX3		2						
Q15582	Transforming growth factor-beta-induced protein ig-h3	<i>Homo sapiens</i>	TGFB1				4	3			
Q3E8E5	Putative myrosinase 3	<i>Arabidopsis thaliana</i>	TGG3	10							
P0A8M3	Threonine--tRNA ligase	<i>Escherichia coli</i>	THRS	10	5		10	7			
Q9SK50	Protein TIC 55, chloroplastic	<i>Arabidopsis thaliana</i>	TIC55		3						
Q9FGT8	Temperature-induced lipocalin-1	<i>Arabidopsis thaliana</i>	TIL		6						
Q8WZ42	Titin	<i>Homo sapiens</i>	TITIN		0						
P0ABU9	Protein TolQ	<i>Escherichia coli</i>	tolQ	7	7						
P09493	Tropomyosin alpha-1 chain	<i>Homo sapiens</i>	TPM1				19				
P06753	Tropomyosin alpha-3 chain	<i>Homo sapiens</i>	TPM3	4			12	4			
P02787	Serotransferrin	<i>Homo sapiens</i>	TRFE				33	23	3		
Q7Z4N2	Transient receptor potential cation channel subfamily M member 1	<i>Homo sapiens</i>	TRPM1	2							
P00761	Trypsin	<i>Sus scrofa</i>	TRYP	12	16		40	17			
Q3SY00	Testis-specific protein 10-interacting protein	<i>Homo sapiens</i>	TSGA10IP	6							
Q8NA56	Tetratricopeptide repeat protein 29	<i>Homo sapiens</i>	TTC29		2						
P0CE47	Elongation factor Tu 1	<i>Escherichia coli</i>	TUFA	85	80			80	5	9	3
P32132	GTP-binding protein TypA/BipA	<i>Escherichia coli</i>	TYPA	19	20		23	17			
Q9SS80	UPF0503 protein At3g09070, chloroplastic	<i>Arabidopsis thaliana</i>	U503A					3			
Q8NBM4-5	Isoform 5 of Ubiquitin-associated domain-containing protein 2	<i>Homo sapiens</i>	UBAC2	19							

Q9C8X7	Probable ubiquitin-conjugating enzyme E2 31	<i>Arabidopsis thaliana</i>	UBC31		9								
P61088	Ubiquitin-conjugating enzyme E2 N	<i>Homo sapiens</i>	UBE2N		7								
Q5T4S7	E3 ubiquitin-protein ligase UBR4	<i>Homo sapiens</i>	UBR4					2					
Q2PS26	Ubiquitin-like-specific protease 1D	<i>Arabidopsis thaliana</i>	ULP1D		4								
Q9LT38	Serine/threonine-protein kinase UNCL	<i>Arabidopsis thaliana</i>	UNCL		3								
B5YUX3	Urease subunit alpha	<i>Escherichia coli</i>	ureC	1									
Q15853	Upstream stimulatory factor 2	<i>Homo sapiens</i>	USF2	6									
Q9UPU5	Ubiquitin carboxyl-terminal hydrolase 24	<i>Homo sapiens</i>	USP24	0									
P08670	Vimentin	<i>Homo sapiens</i>	VIM					7	4				
Q5THJ4	Vacuolar protein sorting-associated protein 13D	<i>Homo sapiens</i>	VP13D						0				
Q96RL7	Vacuolar protein sorting-associated protein 13A	<i>Homo sapiens</i>	VPS13A	0									
P04004	Vitronectin	<i>Homo sapiens</i>	VTNC					18	10				
Q96KV7	WD repeat-containing protein 90	<i>Homo sapiens</i>	WDR90	1									
P0A8P8	Tyrosine recombinase XerD	<i>Escherichia coli</i>	xerD	13	8								
Q9C516	Extra-large guanine nucleotide-binding protein 3	<i>Arabidopsis thaliana</i>	XLG3		2								
P0A8E1	UPF0227 protein YcfP	<i>Escherichia coli</i>	ycfP	11									
P77804	Protein YdgA	<i>Escherichia coli</i>	YDGA						3				
P76403	Uncharacterized protease YegQ	<i>Escherichia coli</i>	YEGQ		3								
P37014	Uncharacterized protein YfaD	<i>Escherichia coli</i>	YFAD						5				
P0ADW3	Inner membrane protein YhcB	<i>Escherichia coli</i>	YHCB	7					7				
P25714	Membrane protein insertase YidC	<i>Escherichia coli</i>	YIDC	8	6			19	7				
P64581	Uncharacterized protein YqjD	<i>Escherichia coli</i>	YQJD		32								
P64585	Inner membrane protein YqjE	<i>Escherichia coli</i>	YQJE	9				25	9				
P64588	Transcriptional regulator YqjI	<i>Escherichia coli</i>	YQJI	68	64	6		68	61	6			
Q9ZU46	Receptor protein kinase-like protein ZAR1	<i>Arabidopsis thaliana</i>	ZAR1	3	1								
O15062	Zinc finger and BTB domain-containing protein 5	<i>Homo sapiens</i>	ZBTB5	5									
Q9NQZ6	Zinc finger C4H2 domain-containing protein	<i>Homo sapiens</i>	ZC4H2						3				
Q9ULC8	Probable palmitoyltransferase ZDHHC8	<i>Homo sapiens</i>	ZDHC8						2				
P77173	Cell division protein ZipA	<i>Escherichia coli</i>	ZIPA	9	10								
Q5MCW4	Zinc finger protein 569	<i>Homo sapiens</i>	ZNF569	4									
Q92610	Zinc finger protein 592	<i>Homo sapiens</i>	ZNF592	2									
P36508	Zinc finger protein 76	<i>Homo sapiens</i>	ZNF76		2								