SUPPLEMENT

POST-ACQUISITION TARGETED SEARCHES (PATS) FOR NOVEL PEPTIDES IN BIG MASS SPECTROMETRY DATA-SETS

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Supplementary Figure 1. Detailed PATS workflow comparing to conventional approach.

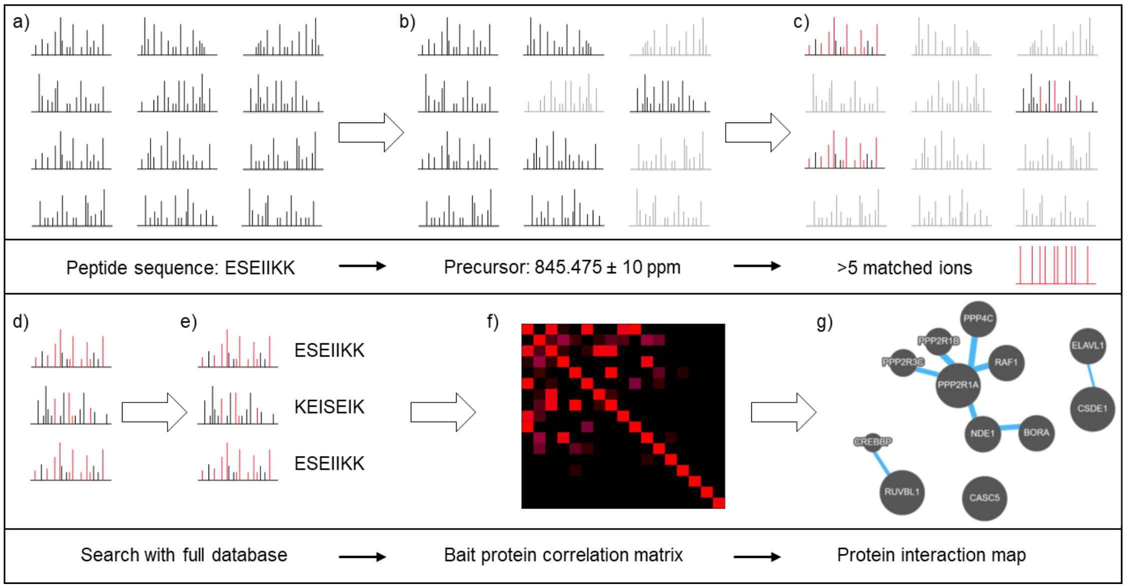
Supplementary Table 1. Small encoding peptide (SEP) numbering and sequences.

Supplementary Table 2. Detected microprotein peptide sequences from human interactome data.

Supplementary Spectra 1-18. Spectra of synthetic and PATS detected microprotein peptides

Supplementary Figure 1

Supplementary Figure 1



Supplementary Figure 1. PATS workflow comparing to conventional approach. a) High quality MS/MS spectra were selected. b) MS/MS spectra were filtered by precursor mass of target peptide. c) MS/MS spectra were filtered by number of matching y and b ions to the target peptide. d) Filtered MS/MS spectra were combined into single file. e) Filtered MS/MS spectra were searched against database to generate peptide identifications. e) Bait protein correlation matrix was generated based on peptide identification, bait proteins and STRING-DB correlation score. f) Protein interaction network related the target peptide was generated based on correlation matrix.

Supplementary Table 1. Small encoding peptide (SEP) numbering and sequences.

SEP	Sequence	Additional Note
SEP1	AEDCASALQPRRQRETLSQKKKKKKGLKLLNKITLTPILSTSLYCHSTILCFTIL	chr2:73685032-73686486_strand=+|ALMS1-IT1:NR_046762.1
SEP2	MKVWGLAAACFLLQHHGMPAQFTLPPAPRDETSPADAVCPGLGRDLCGSSRCCLRPPSQPDWKEPSGAALRARPAPRGR	chr6:24403092-24425750_strand=+|MRS2:NM_001286265.1
SEP3	WRAASRRPVSDGTSTLSPRHHWRVTSPGSVCGALACPSSTFPRGPGEAGMSWEEAGGLAPHLLCCRGQQRKTMWTCHCLVPLCLAQGSRLKGPQVDLETLRVENGGRPA	chr6:36646489-36655106_strand=+|CDKN1A:NM_001220777.1
SEP4	MNFKNGPIFYPRGSSDIISVPCEFPPSMGRMPLLFISNKL	chr9:5784555-5791478_strand=-|ERMP1:XM_005251587.1
SEP5	MSSMPLICFLILEGLGRSWRATPTTPEEV	chr3:42700959-42709057_strand=+|ZBTB47:XM_006713415.1
SEP6	MKACTTVPPAPGCSMPTTAGTRRAVPAQGLLQSTPTCMPWTPYLCLCWWVQGWP	chr1:160061136-160068413_strand=-|IGSF8:XM_005245613.1
SEP7	TKYLCNYLITLVNRWNMNAWKIKL	chr12:115108455-115109381_strand=-|TBX3:NM_005996.3
SEP8	FIQILEDQGLSSFILG	chr5:53783495-53783605_strand=+|NONANNOT
SEP9	IMYALGNENPVTFLNKFLYLHHNL	chr14:44572751-44572856_strand=-|NONANNOT
SEP10	MRHLQIALRQL	chr9:127023982-127024178_strand=+|TBC1D32:XM_005266861.1
SEP11	ARGDAPGAGPQAGSACRYRGHRQGGCGQPQAGQALQGLQWCRDHVRLPRG	chr9:124030419-124094730_strand=+|GSN:XM_005251940.1
SEP12	DWRITRRALTSSQEPFKSSFLCLVEEIGGIKPKKVFCC	chr20:62284523-62286347_strand=+|NONANNOT
SEP13	VWVEQVIIRMSQGEAGNRNESGWSR	chr6:161645965-161646164_strand=-|NONANNOT

SEP14	EVFDRYFEINMVCISLWKLTSQWRFPSLYIYVYIYIYVYVCIYNSYLCLFEVRGYMQTNNEIY	chr8:25292135-25292495_strand=-|NONANNOT
SEP15	ARVCKPDTLYVFTHVSTYTHAPAAHASVSSSSHPFSCCCLPSQAGAGSFLGDGGSPGCRQPSRQYEDRRPTGLAVRGVAPHRFMILKSQLPLPAS	chr17:40925462-40948763_strand=+|NONANNOT
SEP16	MYNHNNIFLRSLRSAQSTYRPHFIAEETSSERLHDMSTDYLTSKWQS	chr3:185498033-185499568_strand=+|NONANNOT
SEP17	NKEAKNHTYKHSIFIIFFRTPKSLS	chr12:19580521-19580665_strand=+|NONANNOT
SEP18	QVAHTLRILLKQFLMVGKKLNNPKHLKL	chr5:27252217-27253483_strand=+|NONANNOT
SEP19	MFRRLTFAQLLFATVLGIAGGVYIFQPVFEQYAKDQKELKEKMQLVQESEEKKS	chr15:55609385-55613829_strand=-|LOC101928527:XR_253377.1
SEP20	LRKGRLEEEKIVEVENGELSAGCLLNI	chr6:10782384-10784044_strand=-|NONANNOT
SEP21	SEEYKRGETDHCLIFLPCSYSQRRVHQAVRLMNFLGIKQILKMEFK	chr5:38972236-38973378_strand=-|NONANNOT
SEP22	VKVKSYTARCRKICFNESNDTDLITKFELLIV	chr11:33278931-33378550_strand=+|HIPK3:NM_001278163.1
SEP23	NVQCSKNETCKEIGTCDSYTGKKTRNYLDKDQMLILVNNDFKAAIISIFKEIKATMFN	chrX:100353186-100424873_strand=+|NONANNOT
SEP24	KGKKTPQFYRLEITTLIDIMTNFFWRFFTHIFVFLCLPKTSNLLSTLFLHFYCYEYFPSY	chr6:143805412-143806379_strand=-|NONANNOT
SEP25	ELLFFPLKNGGEDDPPVATQFAPSQDATAEKAAVWTLWRAASSRWLPSL	chr7:100434573-100435233_strand=+|NONANNOT
SEP26	HWLIYCTSGSRLCFLWGEGRAGSRSALSPELEFSGGISAASTSWAIKRSFHRSLPSSWDHRCAPSCLGDL	chr7:66117889-66118600_strand=+|NONANNOT
SEP27	VSIFLPKVILGRDKGVFLEDVLRHTLLKKHWRLF	chr9:68400605-68402846_strand=+|NONANNOT

SEP28	MEFFITRK	chr7:151922816-151923301_strand=-|NONANNOT
SEP29	MLSPLQQVCLEFCSVSPTSPDCIFSAAQNTSPTPPSSTLLAPPLSRLEEALEAAGGAQAARGQVCPAAADVPLLGTGIGCLLTKRMGKYKLPIPLLANYKPQMGKSRVRGEGWKAEMGVLGYRRHLKAREVKKG	chr9:35725443-35728861_strand=+|NONANNOT
SEP30	KDQLSLFKNNSPSTIITSR	chr11:76248705-76254909_strand=-|NONANNOT
SEP31	MKFLDLTLALRIQDGNYNGHEDRL	chr7:86606421-86606768_strand=-|NONANNOT
SEP32	QPLISKNSHWWNKPHQGSKNGHQTHQSPTV	chr3:15247751-15301267_strand=+|SH3BP5-AS1:NR_046084.1
SEP33	MQLFVYSAYLSLNGES	chr4:166327097-166327492_strand=+|NONANNOT
SEP34	SQFSEESVSLMIGASQTEIEREKIVLKKDRPFNDCTIISKHVTHISAIPEERENRVQTTYTVTLVENFPKLITATKSQTQEDERTPNRMNTKGNTFIHILFKLQTNKRKENIFKVARGKGWSLGG	chr15:87878674-87879358_strand=+|NONANNOT
SEP35	LIKMGIMVKAEVLARCMAYSKHHKVTYASNNYSLCGLMMRIRSKI	chr3:12568054-12568215_strand=-|NONANNOT
SEP36	RGSEMIPCLTSQLGGASTSVKLST	chr5:138275241-138283167_strand=+|NONANNOT
SEP37	MGWRISTPFSSKRTRCIQYQRAFLGPTSCLLLFSTGTPGYATVRSSIFVAGCRTMLKMSTYGSKVWTSRP	chr17:4835352-4837123_strand=+|GP1BA:NM_000173.5
SEP38	MGSQHLPLRVTVRCRCEQGLRLGKKSMSATQQGAMAGAVRGRLG	chr12:117151124-117175823_strand=-|C12orf49:XM_005253937.1
SEP39	MDEWISKMWYLHTMEYYLGLKRKEILSHATTWVTLEGSMLGEISQMQKDKCCMIPFI	chr10:95057205-95057400_strand=-|NONANNOT
SEP40	MPTQFFFKREL	chrX:15843934-15863636_strand=-|NONANNOT

SEP41	LYQRREELKLQWRSFNLDKIVYGDIRKEGILNALETMGSSF	chr8:17873932-17874063_strand=+|NONANNOT
SEP42	MSRGQFGQGQEPLDMFFWVNEISGEITYPPQKADAPAVSPESPQKKPPFQPRSVQEAPCSPQGPPAQRPALAPPSKPSLKDSGSRNPCPSAPTWARPKPEE	chr3:44462454-44493083_strand=-|XR_133338 LOC100506301
SEP43	MLLYGVTLAAKRECLKKTSPNVQVVIKSLFASHLLMSHWPKQVTWPSPESVWEGTTQGCEYQEAWVCGGHQYIPYTS	chr20:45298911-45299385_strand=-|NONANNOT
SEP44	MPKNFFISKIKALAYIGARC	chr9:88428049-88428393_strand=+|NONANNOT
SEP45	MPGRDGGRQLAPECGRRRCSPQPSGSGMAGASALLPTDPPEAETESPRAPSSLPSKSRCSHCRRHDAETKEAESSPATDTAAAPAARAGRDWR	chr6:30522829-30531396_strand=+|NM_025263 PRR3
SEP46	MAGGDPAAGRAVGAAKAKRAAGICGDTAAPALSGHPPDCLPESPGRGGLTCSPSQSRFSPLELAAGGVRGCGAQLVTVGCSEPSWSPGEGAGPGEQQSLDVEAAEALQAGPASPRCRLLLPCPCCFG	chr6:32780349-32806575_strand=-|NM_018833 TAP2
SEP47	IRKYLDLHERQIFHSNKHLNNIINCKAQTTRVK	chr16:33121842-33122879_strand=+|NONANNOT
SEP48	RTLSEITQGLGGGIGIRTQLLDLETGFLKGKEGACTLGSDVESEISKFMVQVCGRAELTLQNC	chr17:48178065-48178330_strand=+|NONANNOT
SEP49	MGFYHIGQAGLELLTSGDPPASASESVEIKGMSHLVWPKPEVLRHYT	chr19:40327193-40330486_strand=+|NONANNOT
SEP50	MGLSKVSVSVTVTLNVLSSVDESEPGICEGEGALVPAGNGIKGTGSGGGG	chr14:58955358-58955764_strand=-|NM_001244189 KIAA0586
SEP51	DGGISGKCLIEEYSVGVTTMYDLKKEKDTLLEVLC	chr13:34124857-34125083_strand=-|NONANNOT
SEP52	MVIAMLFVAVKKWKWSKCHQQRTG	chr11:11803558-11805863_strand=-|NONANNOT

SEP53	MLYDCLCTSFCVDVCVFSRIQKVRILSDKFNKESEIIKKNQAEILELKMQLTY	chr6:118017079-118018042_strand=+|NONANNOT
SEP54	DWSSGDEFPQFKVFLLNK	chr4:84156218-84156708_strand=-|NM_052834 WDR7
SEP55	MMKNQWMEIGHHQLHQPSRFLHLKHPEILPTVQGSLVQQVALRLEVLLRKEVLEQLMKMIL	chr3:33537746-33759712_strand=-|NM_001207044 CLASP2
SEP56	MNVRNVRRNLVVVINLFYITGFMSLRDPMNAKSVGRTFVVAINLLYIKDFILVRNPMNVQNVGRTLEVVIS	chr19:38230342-38231032_strand=-|NM_001172692 ZNF573
SEP57	MEFHSLPRLECNGTISAHRNLRLLVQAILLPQPPK	chr8:124471523-124472268_strand=+|XR_111795 LOC100509315
SEP58	GHLRPSSLSTKLEIILESMSELPYELVLKYNTGS	chr14:56021802-56026332_strand=-|NONANNOT
SEP59	NLGFQRPLETLVERSWSPLHFQCLVACLAPSGAQ	chr5:149891915-149892156_strand=+|NONANNOT
SEP60	VNFCNKASWDLKKIYNRLYFLEKF	chr18:9345769-9345975_strand=+|NONANNOT
SEP61	MTTGERDSAKPIRATATRQEDRSPEGGWRQVEGTGTPKSKQGSRVLAAQEETQHPEAVPQRADPKGASASPLRRQ	chr16:624062-629182_strand=-|NONANNOT
SEP62	MDELSQYLKVILPSTVVLDVILLQLSFLLYIANFLFSLGSLP	chr4:83831822-83832435_strand=-|NONANNOT
SEP63	SQHFGRSRQVDQEVRSSRTAWPRW	chr6:17701564-17701878_strand=+|NONANNOT
SEP64	GWGGRGPSNPPPSPCLSLLCFSSHFRVHVQCLIESPPPGGAGSCPPGAYGLSRPSRAPAQLGSCCASFTSPSSLNLPLFS	chr3:184053746-184068183_strand=+|NM_144635 FAM131A
SEP65	DFVFNSLSKILVENRPAFVNENIPDITKPKHF	chr6:10801828-10803161_strand=+|NONANNOT
SEP66	FFLAFRLFETKAILFCGCCAALKRWISYFFLC	chr1:160313607-160313730_strand=+|NONANNOT

SEP67	MYLLFAAPSLNLQSKFERGRETERERID	chr2:156867321-156871777_strand=+|NONANNOT
SEP68	RVAEIIIERLVSHGINLALIFSIWKCLKENHFHCRKSFFKYLLYPREISLYLPPQAVISCFREWNPPCPSIFWFLGLNSSLVKSPWLGILSWEQILSCSLMCLHSPKTLYTCLLRA	chr12:122714123-122751118_strand=-|NONANNOT
SEP69	MVAIVVARVVTIPKIMHQPVLSFLNFHVPLYTFMSVYVDLSLV	chr8:9565334-9565564_strand=+|NONANNOT
SEP70	AGDFLNLRIGISYQFCKFSPINYFFFLFSPCLLYGILLDIS	chr2:108294549-108364747_strand=-|NONANNOT
SEP71	MADDKDSLPKLKDLAFLKNQLESLQRRVEDEVNSGVGQDGSLLSSPFLKGFLAGYVVAKLRASAVLGFAVGTCTGIYAAQAYAVPNVEKTLRDYLQLLRKGPD	chr5:139941187-139946658_strand=+|NM_080670 SLC35A4
SEP72	GTTFSWVIRLLFAGKLNYSSMS	chr8:99962637-99963699_strand=-|NONANNOT
SEP73	QRVQAERLAIRARLKREYLLQYNDPNRQGLIENPALIRWAYARTTNVYPNFRPTPKNSLMGALCGFGPLIFIYYIIKTERDRKEKLMQEGKLDRTVHLSY	chr4:43901065-43901402_strand=+|NONANNOT
SEP74	TFISPHIYLEETLEIAARKCTP	chr2:82967185-82967587_strand=+|NONANNOT
SEP75	LFFHDFINLKAHRKVAPLITCMETSVLVNSISQS	chr5:127419792-127524262_strand=+|NR_046207 SLC12A2
SEP76	IWSRVVTLTLQSSENQRQNIKGLENILQKEAATCVDNGLFMPLLLSLTVC	chr16:15198209-15199311_strand=-|NR_003610 PDXDC2P
SEP77	MAPLGLKDPLSSWLTPVAGKLVMAVS	chr2:65855310-65855473_strand=-|NONANNOT
SEP78	NSTNFFLLIKQRSFGGFIPIADKRGKDGKCSRFLSFHKQEFHALPLLKQRKE	chr16:11933549-11935884_strand=+|NONANNOT
SEP79	TGAGILLLRWLTHWLLAGSLRSSPGVPLHVLLHGLMMWHEPHSV	chr18:9864909-9865248_strand=+|NONANNOT

SEP80	LIKKQNSLIANMEKVLVVWMEDQTSHNIPLSQSLIQSKGQTLFSSTKNEKGEEAAEEKFEASRVWLMRFKERSCLHSIKMQIEATRADEEGTASDPEDPAKLIDKSGYINRFTM	chr8:130294845-130296415_strand=+|NONANNOT
SEP81	MLELFPFNSVNIVPHSLLASIVANKMFIVSQALPYC	chr2:78557644-78561636_strand=-|NONANNOT
SEP82	IDWRRKKRKKIEKRKSFRRAEVNTKNISPLLPHLPPPPPLPLLRLQKAVVRVRVTIKKKKYKGRKERKTSVQGITTVILKRRTSLRRESFMKNFLAVTITGKKPRKSPGS	chr2:175212881-175263481_strand=-|NM_004882 CIR1
SEP83	TIRHKCQTFIGGIRTTNDNFGIIDI	chr8:129965805-129966053_strand=+|NONANNOT
SEP84	KQQPPLFSLYKFEFFPKLKDLHLSWEPKEKNGLPSVLLVKEIL	chr5:79095189-79095905_strand=+|NM_153610 CMYA5
SEP85	IIFKNEFLLKDHVLFFKSIFSSYFCYC	chr21:46488355-46488674_strand=+|NONANNOT
SEP86	MLRKKRRETVGGLLAISPTAPKGFPLQL	chr2:176563995-176564390_strand=-|NONANNOT
SEP87	DQPGQHRKALFLQKIKNN	chr15:89045061-89055234_strand=+|NM_001170794 BACH2
SEP88	MAEIIILKAKVFDLQDF	chr16:9153978-9159081_strand=-|NONANNOT
SEP89	HQVYELQACILRMEIFCSEKVGDNLEFI	chr7:12353497-12446953_strand=-|NM_001135924 VWDE
SEP90	ELCCIFCGSSKTPLLAYIQPDTSAF	chr5:139483515-139483659_strand=-|NR_102739 LOC100505636
SEP91	PTWSPAFATWPSILGLPRAPPVPLQPPRPPRVGLEDLGQHLQLQVLHSAFLPQLTQALLDSLVVLRTLDLVLVLAQQRELVLV	chr4:77035820-77069583_strand=-|NONANNOT
SEP92	HAFLNLRAIPSPQSNNLERPQVQLLHSPDPLLSTPRNLQTPGAVGEDKKKSGVA	chr1:52519251-52521743_strand=+|NONANNOT

SEP93	NTHPHLLDNNIFPFNNALILIRHKHFNGG	chr13:108521011-108526878_strand=+|NONANNOT
SEP94	TQEVEGAVSRDCITALQPGKQSEVMSQKQTTKIFNNHTLIIK	chr1:52960264-52960434_strand=+|NONANNOT
SEP95	SSGKGKSNSQRDFTSHQLERLSSKRQNIKRVGKNAEKRKPLYTIGWNLNWYSHYKKQHGGSSKN	chr7:12450740-12451773_strand=-|NONANNOT
SEP96	SQPPLKCLCLIKINALLKGNILLSNKCGCVFYHTSILRKCWTSEYHKTGN	chr13:108521486-108526772_strand=-|NONANNOT
SEP97	VRMLDLLIQLQVPAAVW	chr11:64002664-64006302_strand=-|NONANNOT
SEP98	ESCPEPTEQKGLSFQPPHHVQSSPDVKSQFWF	chrX:119745582-119754975_strand=-|NM_014060 MCTS1_v1v2
SEP99	MCLPFLYTVLLPKLPSVDL	chr8:9403098-9403311_strand=-|NONANNOT
SEP100	HSLLNIRSFILVRSHLNVRSVGRPLIVAQTLFNLRVFILVRNPMNVRSVGRLLDFTYNFLCIKNLYR	chr19:40529109-40596836_strand=-|NM_001005851 ZNF780B
SEP101	APFLGGLPCVLEEGEQRARILGSWLSELPDTGSEHVPGILSCQQGPG	chr11:134094604-134117677_strand=+|NM_052875 VPS26B
SEP102	QTKTRLLITTSRLIVNSKRPRNSEGRLSDTPTSIRLEYPS	chr9:115980741-115983650_strand=+|NONANNOT
SEP103	MMTNSTFPRRYNRSHYQKPYNNNLRETLAQKP	chr19:50840986-50856670_strand=+|NONANNOT
SEP104	MPSPQKIGTAFLNKKE	chr16:53728816-53730245_strand=+|NONANNOT
SEP105	KLLLDLNKSQLGKISRQKIFMAC	chr10:15478885-15479329_strand=+|NONANNOT
SEP106	YTDAVVLVYFKQVKALIK	chr16:72452815-72454466_strand=+|NONANNOT
SEP107	RVFICIFRASFKINYKKVQLKIGESFEKSKITVCPEEELLHSYSKEGQN	chr3:197787735-197789967_strand=-|NONANNOT

SEP108	VISTYEMGVDFLPQKINIKKKIIQYI	chr8:91519522-91520168_strand=-|NONANNOT
SEP109	TLLSDHVLGAVSNQLIPKHNLLKPNSLGQKGFLAFILRGYQKRT	chr21:35275511-35288046_strand=+|NONANNOT
SEP110	VPSGAWGTCVAIFSRGSWLALFLPRGPCPCRAPSVEGENMK	chr11:2391037-2391433_strand=-|NONANNOT
SEP111	GVSLEPKVESGRQPELRLPQDSDLLRITPPTSNPESIFLLGENAYIYFL	chr16:16170189-16236878_strand=+|NM_004996 ABCC1
SEP112	KFLENNDDGNATDQKLWDTTKAGLRGKFIAIIAYIKKEKNL	chrX:120338054-120341958_strand=-|NONANNOT
SEP113	WSWRTLLLLPLNIRTPGSEVFELLNLHKQALRFSGLQLKTES	chr12:74853896-74854278_strand=-|NONANNOT
SEP114	DILLLHDFLASIEVIIRFFSINL	chr21:20167140-20167299_strand=+|NONANNOT
SEP115	IKSINYICIWEIEKVHISHDFEVKRERIFGKEG	chr5:34183374-34185173_strand=+|NONANNOT
SEP116	KYWATPTIKIPLSIVIRKRFIKMFSNRLTHMRQRVRFAHATPEAVSG	chr5:81078543-81079471_strand=-|NONANNOT
SEP117	MNYPSRYILRSFDFINLRGRKQLFPLY	chr16:8991978-8996350_strand=+|NONANNOT
SEP118	KNNKFLKSTLFSGCLFVIKCNVFKSSIS	chr2:69476143-69476401_strand=+|NM_032208 ANTXR1
SEP119	ITRVKIHQHLALGALRSDTRLTY	chr22:26860929-26864708_strand=+|NONANNOT
SEP120	ESLTEKDPTFKFMKLNKDEFNYC	chr7:6789180-6793491_strand=-|NONANNOT
SEP121	LSELSNGVFLHENLEGIATKPGKERTMVPMEKVHK	chr20:25712848-25713130_strand=-|NONANNOT
SEP122	MVHCSLDLPGPILLPQLAVVAGITGVYHHTWLIFFFFFGRHGVSLCGPGSSLIPGLK	chr5:80597485-80605440_strand=-|NONANNOT
SEP123	ISCPEKYPRFSFILNFPLSRSHSLLSLSSHSD	chr1:161284832-161284990_strand=+|NONANNOT

SEP124	IAAPGQACSGRWVDTQKTGPESVGGGTEPRGGQVGARRSSPHYQGLVD	chr7:44800637-44801496_strand=-|NONANNOT
SEP125	WFHSCQLLGLKGKKYNIH	chr9:128724377-128729551_strand=+|NR_024123 PBX3
SEP126	LPCDLYRNIRGGEAGDITSRIAAGALSPLRCGS	chr11:3408735-3430083_strand=+|NONANNOT
SEP127	PHSVTNTQKSLLNSVISEVILR	chr16:18089134-18089599_strand=+|NONANNOT
SEP128	MCAEIEEGAEGVTARDQYGHLIPTKVASGPQGLSGARKPSFPSPRLRGSCHFLSQVGGWGI	chr16:29982572-29984370_strand=-|NONANNOT
SEP129	AKIVPLHSSLGDRVRPCLKTKQTKEFRNDLAFIFLPDRQCIHQDGTLTGNQVLAPLLAGKEHEVF	chr15:31218600-31220691_strand=+|NONANNOT
SEP130	KGLFLLLGQKISLTKQKGALSLSELPQTIYWGPVKRQMSKDSKFI	chr17:56066228-56086144_strand=+|NONANNOT
SEP131	GFLFQLCLHYLHSIIPSSLNLLMGRTQPPTTKLTVRVL	chr14:95645271-95645404_strand=+|NONANNOT
SEP132	WSCGLKCVISDRLLLLSIAPGDGSSEKVSYLASWRSDKDSPCGVGLCRKSINKSLEETFCILGIGVLCANQGSVFSMSFSGIVVALNCFCLVLGCLEFWEKLLGSMALFLLSKYAEISS	chrX:154159069-154159686_strand=+|NM_000132 F8_v1
SEP133	MQLAFICSSITTATSEVLVTIISRLAM	chr13:98012703-98018647_strand=-|NONANNOT
SEP134	KKNFRRSPAVNISAVRILGRRHGS	chr2:234384197-234469870_strand=-|NM_018218 USP40
SEP135	QSKTPSQKKKKKKSQQHTHGDIFLKNSHKIK	chr11:114325616-114326071_strand=+|NONANNOT
SEP136	MPSLSVPLSYLDRQMGSLVLQIHHSYRHCSDGTQGTSQRGSLSREQLTEH	chr1:161136224-161147286_strand=-|NONANNOT
SEP137	KVLVETHAFLTVTQELL	chr17:76001568-76001690_strand=+|NONANNOT

SEP138	MMKKWATMNTLFNFISKLVLHSVDNVLDVLF	chr8:66567401-66567615_strand=+|XM_003846486 LOC400682
SEP139	FGEVKARPPLGLKGHFQTFLSVTWSVYASHISLINSSTFYLTAVIMVGRGARDGFTYCTEM	chr3:10157357-10169022_strand=+|NM_018462 BRK1
SEP140	MSMCVRNSIQGWRHFWF	chr16:15112097-15124265_strand=-|NONANNOT
SEP141	MLFSSTLPMPSIFLMFRSHLRCHFHCSTSS	chr13:33080751-33086968_strand=-|NR_026928 N4BP2L2-IT2
SEP142	SRHSWKAEYRTPLIKDLIFILNPRPPKRGKCHGTRCVAFLSSAPL	chr12:57411725-57411927_strand=-|NONANNOT
SEP143	LCDLLSKHDMVKIRIRHDEG	chr3:110639864-110640215_strand=-|NONANNOT
SEP144	MNFVSDMLNLRCSWSQSNMSLVLRKELWSQGSSNSLQSMGIC	chr21:34020720-34021204_strand=-|NONANNOT
SEP145	MRGPPPGRRALEANEACLPFIWEWRGEEET	chr8:80942254-80942687_strand=+|NONANNOT
SEP146	NTYCLALCRKSLLTPDVNFKLHKKTGV	chr8:124530101-124530292_strand=-|NONANNOT
SEP147	MLLIPTSPPHPQHLLSAQSTPITRKGLFLKGPTGLVLLWNPVLESTL	chr6:17759506-17762318_strand=+|NONANNOT
SEP148	MYIDECLQLQQVFLHALAVDVLQDTRAARPRRPWRGQQPPSTSPMQDGELNRFPGRYPAGGSNASCLTLISSSKDRLPKDGSGEWGPAPFFFFFLPGWSEMARSRLTATSASQVQAIFLPQPPE	chr19:55649318-55653007_strand=+|NONANNOT
SEP149	GWDQVYGEENDFLILFPCACVCMSVYIFRDVFVFPLHKCYSFMFHGYLE	chr5:88014045-88018690_strand=+|MEF2C NM_001193350
SEP150	RVPDRWSPTPKKEAETWSCARQWQWPVHAGLASIAAGRPSHRPRRGGEQPHHAAPAQEAAEKEGRARQPGALWPAQPENSKFEKEEENESDVKLGGAQRGAGVRSWATPGSGKQWDLQFPEEAEAEGRERLCEV	chr21:45105748-45115959_strand=+|NONANNOT

SEP151	MWVQGPHVPLPLPVMECSEGLWHLLEAQGVPNERELLWLESLWGLGCQSTRQARTWRAQTLSPGGQEARWGPCLKDWSP	chr1:31342371-31361123_strand=-|SDC3:NM_014654.3
SEP152	FFSIFRRDRFSPRWPGWSRYPDLVIRLPLPPKVLGLQV	chr1:150343960-150344120_strand=+|MPL:NM_005373.2
SEP153	LKAKLQIITSKSYKNICWELNTYIKYWTVQNVEMKHKR	chr15:49280838-49285216_strand=+|SECISBP2L
SEP154	GERACSKINLMLDRD	chr17:67992904-67996880_strand=+|NONANNOT
SEP155	CKSELNIKNCVNTIDIGITLKY	chr10:124768480-124817809_strand=+|ACADSB:NM_001609.3
SEP156	MEALFVPEKKKLKTTQRPTNRMDKMNISIQSNIVNE	chr7:32735224-32735731_strand=-|NONANNOT
SEP157	EQQRHPQEPGIAGGGGERGVGHGAQQTRREAVREAGELAGRCLRPGLCGSPRSANPFYAWLRLESPERPGQGNSRSSRSIRSPEGRRRPRPRGGVGYG	chr4:74904262-74904922_strand=+|CXCL3
SEP158	MLLDIQYILKKFSMNPSIKQIIQGAIKFMFSKIKSS	chr2:17844495-17850489_strand=+|SMC6
SEP159	GKYSYLEKENFLDKFLKL	chr8:9423769-9423869_strand=+|NONANNOT
SEP160	KGAWVLVNCLLDLEIKENTGERRFSIECGFFTQETLQGIRGTCPQYFNVGSFYFP	chr13:70234870-70235374_strand=-|NONANNOT
SEP161	MRIIPALLEADEGYPFEVRSWRPAWPIW	chr3:163403983-163404349_strand=-|NONANNOT
SEP162	KEFDLLSKVFQTLKLHICH	chr1:83599137-83599370_strand=+|NONANNOT
SEP163	SKKKVKDRKLENLMPAKDGLIIVERSLALCMLR	chr6:99387016-99387302_strand=-|NONANNOT
SEP164	GCEADDVHTAQVSILADNCPFKLFQPHPVRYQRRQQLAQPGLLAGQAREGSSGPEAPKPLHDTCPYVQCLEDGGLRGDQGPAFHAGESPAAPGPPEAQPHISDPHLVLRC	chr20:42295716-42345131_strand=+|MYBL2:NM_001278610.1

SEP165	ASRTLQSFFIGSIRCLFPTRAIQQVLKEN	chr8:125467607-125470995_strand=-|NONANNOT
SEP166	RPTWSRCGTNKVLRVSFAAFCWQRECTLVMKPLEFLLKREFLQPPIHQIVCSRMWMKGRSLSWATYLRT	chr2:239152640-239197306_strand=-|PER2 NM_022817
SEP167	SSRVKDYLKFMCSHTYFVT	chr2:47600600-47601323_strand=-|NONANNOT
SEP168	AYQGREYRQRKGSPLLFLQVFQHEGVREMGRKPHKD	chr4:86297867-86298058_strand=-|NONANNOT
SEP169	MVYFCFTIIPRMLSFRISNQRILPESQPWRSYTFNVRPSSLPKYTTHVFSLFLANKSPLQSKSRLNSKFNF	chr5:44812872-44828662_strand=-|GATA6-AS1
SEP170	MQSHQALPLLLLRQVEVDHHVNAAVDGTVELLRQIAGQDQHESVGQGWGRKRWGCQLRCPEGNGGSSAPSGRLFGRI	chr1:1424437-1425809_strand=-|NONANNOT
SEP171	LVTFEDLGLIWNNQRKQELPLY	chr2:205660031-205660209_strand=+|NONANNOT
SEP172	ECKMVQLLKLEVEVPEKIKHRVMFMY	chr2:10244681-10248113_strand=+|NONANNOT
SEP173	SPSDENYKAASSKEVNTDESSAAGVFHMR	chr11:77319073-77325243_strand=-|AQP11 NM_173039
SEP174	LKVGKIAWLEFKSLLPLGPKPEILHLQPTENALEGCSPMLIR	chr3:128996926-128997117_strand=-|NONANNOT
SEP175	EPNGIKRIESEGGGEGWGRESIQESW	chr2:231589548-231590185_strand=+|BANF1:NM_003860.3
SEP176	MPMEPALIVAFCFDEFELEPEQDCCKQ	chr1:67751219-67751585_strand=+|NONANNOT
SEP177	LWTFILYCRNQYLFLGGYVKDLKNYYLVCSL	chr1:150317600-150318971_strand=-|WDFY3:NM_014991.4
SEP178	ERGAGAGPHLGPQVEGGLQQVQRGSALLRERPPRAGVRRHLQCL	chr22:22308818-22337181_strand=-|TOP3B:NM_003935.3
SEP179	GNITHQILLGGMWQGEEDH	chr1:195789567-195789749_strand=+|NONANNOT

SEP180	LLAENLPIDFLNIRKIPN	chr8:30535597-30585324_strand=-|GSR:NM_001195104.1
SEP181	GRIESWNRKTGEKHRVCSLISTIVVRLIS	chr7:22510284-22510452_strand=+|NONANNOT
SEP182	MAMGKGQEVLRWEVSALTGLSGGL	chr5:10158411-10158577_strand=+|NONANNOT
SEP183	HPTQPAQRLPIISDPLLLLPSHTAWL	chr1:24034077-24035038_strand=-|NONANNOT
SEP184	MLLNPPMKIFHYKTVFHTTAS	chr1:212531453-212535680_strand=-|PPP2R5A:NM_006243.3
SEP185	NCPAHGKPYLVYFGIILLILLYCCGIYCCCTLCVRMQDKLAKIFLNGTYIHLPDVTFCKDSEL	chr8:56636872-56637117_strand=-|NONANNOT
SEP186	TPPISIESRGEKCRIQQLFLTNCNILSWLPYINKE	chr6:4823265-4824846_strand=+|NONANNOT
SEP187	NCTRTADGCELPRLLNKINYNKLLTLFSM	chr15:41849141-41849860_strand=+|NONANNOT
SEP188	THTFCGVYSFLVNAVQLLM	chr9:100689089-100700593_strand=-|HEMGN:NM_018437.4
SEP189	TSTTSLSGTTWTRCTSPLASISWTKSFQEMLPPLVLRAFRRLMTTAMTSKVRSRSRYIWSSRSRRLLSSEPAEKQKGETNT	chr16:89590029-89594505_strand=-|SPG7 NM_003119
SEP190	RSTNSLLSTNSGVEKVGCHCL	chr12:69813707-69814545_strand=+|NONANNOT
SEP191	TLQIINHLRNSERLINSNTEVREKQDLKWTLLVCGIE	chr3:112539900-112542022_strand=+|NONANNOT
SEP192	KSGQFSYFFVCLAIILSERDALKVAGRQTDLL	chr1:110882061-110914912_strand=+|NONANNOT
SEP193	TWEAEVAVSQDGAIALQPGRQERNSISKKKRKKENGNLTFSLIAFKGLALCLKDIL	chr9:95194519-95194749_strand=+|NONANNOT

SEP194	DVSLVETEQNIVALELRFAGTEDTLVSQVLVHLLQALQALGHVLIIDLGIKGGHGLLTHEVGTVDVKPGALLNQGHRQGVTEVLLRDILATGEGEDHTHIPMQRGNREKDHATTSISHFSI	chr21:47685600-47693148_strand=+|NONANNOT
SEP195	ELRKAKVLFCLFLFIYLYNY	chr4:145030055-145038548_strand=+|NONANNOT
SEP196	LYRQDNWVGLLWGNPPSITIWGCGEAILQRSFQLKGDGVFVLKSGRAWFLGFKDWAF	chr12:94688630-94690814_strand=+|NONANNOT
SEP197	MTVQRRHGDEITHGALTGNELGSFDVHIRSCRFCLPLGLMAQEHCYILPAAFELEVGW	chr1:53384961-53385662_strand=-|NONANNOT
SEP198	LLELAPLTCFGCLDCKWKSLILTHIGAPPHPTP	chr14:59925205-59931181_strand=-|NONANNOT
SEP199	HHLLQRLFFLSWNFLGFIVANQLTINLEFVSGLRILFH	chr5:27717055-27717588_strand=-|NONANNOT
SEP200	CIGICIYTHTHLKVIIIMENTKDIFTSTIRSKARISSNYAIIHHITGNISQYS	chr2:160547202-160547607_strand=-|NONANNOT
SEP201	NGVGPDGRLLGLESLLFLQMTS	chr14:23741387-23746392_strand=+|NONANNOT
SEP202	QMPSEVTVTAIARDDD	chr14:57430195-57430368_strand=-|NONANNOT
SEP203	CCNKVELQTSQRNLRAMSEFWKEINWNIPLLSWQPPKGFGNAPCQIFDSIF	chr1:165664398-165664673_strand=+|NONANNOT
SEP204	EEKERTLQVLRLEIHGCAQPVLSRPETLGVGARRQRSQIVVS	chr8:126009798-126010145_strand=-|NONANNOT
SEP205	KSEGMLEQKSQIKMKYENIT	chr6:88240174-88240816_strand=+|NONANNOT
SEP206	NLIKITVCACVCVSVTIDEIRLFMSVKIEAGRWVCEDSVCHSFYNTFLYV	chr6:148065557-148066827_strand=+|NONANNOT
SEP207	GSEIFKPPGPRCKPSAKISAGGRSAF	chr14:61744089-61748530_strand=-|TMEM30B:NM_001017970.2

SEP208	MPTGSSPHLLPSRLNSAHLGPCNSQPSSGLMSSKGLDDPLPQPPSPEGGLCPVCSPVDQGRSQGATPSKGCGWTLESQGGAVPHPVMTLSEQGGARGRAEWGWAPAGHQGLRASSPWATLFLRGILKTSENPKCVRVS	chr13:29283091-29289675_strand=-|NONANNOT
SEP209	SIGFIIGINLVLDIFKLYLVQLILTITTVFLAIVCSD	chr14:75745481-75748937_strand=+|FOS:XM_005267488.1
SEP210	RRHPPDQQRLIFAGKQLEDGGTLSDYNIQKESTLHLVLRLRGGMKIFVKTLTGKTITLEVEPSDTIENVKAKIQDEEGIPPDQQRLIFAGKKLEDGRTLSDYSIQKESTLHLVLRLRGGC	chr17:21729873-21731760_strand=+|NONANNOT
SEP211	GFPWLFFSSGLSYCASGSYWCHFMIVKKLPNLKQNDQKPSGKREPIHSTEDPQVLLKM	chr2:160958233-161056589_strand=-|ITGB6:NM_001282355.1
SEP212	QVGAGWGLNVKRQWQAAGVERAQQP	chr17:77751977-77761449_strand=+|CBX2:NM_005189.2
SEP213	MQRVQMHLLQEKLLLLLPCGLCQVCPGLHLQRGVGQVQLLRLMLGQPRSQM	chr16:56642478-56643409_strand=+|MT2A:NM_005953.3
SEP214	FCLSNDFFKSIIYIYGIFQNSNCHIKKHDNLNDLNKNTVPKIKRQL	chr2:160802326-160919126_strand=-|PLA2R1:NM_001007267.2
SEP215	MPSRGTRPEDSSVLIPTDNSTPHKEDLSSKIKEQKIVVDELSNLKKNRKVYRQQQNSNIFFLADRTEMLSESKNILDELKKEYQEIENLDKTKIKK	chr2:190526125-190535557_strand=+|ASNSD1 (NM_019048)
SEP216	ILSLGWWKLIFEIKNPARTVKPQGMAALQVRRSLGP	chr14:51800111-51832275_strand=+|LINC00640:NR_038358.1
SEP217	RTYVLPQTIFLCPFHSVLTLPLLRGNCYSDFYCCIFLLPLLEFYMSGITH	chr17:35990853-36002800_strand=-|NONANNOT
SEP218	MDYIMKEYVKRTYSNAQSLICV	chr20:13370036-13619583_strand=-|TASP1:NM_017714.2
SEP219	LLSRIPWYGCTTVCLTIHLLKDKRVVFSFLPLLIKLL	chr8:146220251-146224283_strand=+|TMED10P1:NR_002807.3

SEP220	MSRLLPVITLLSRHVAQLLSKVKQTQPVAISITQVTGFAGMMMG	chr18:31158541-31327399_strand=+|ASXL3:XM_005258356.1
SEP221	MVTKIQMAQKRIFSLLALMEGMKQLQVMIPAQMKALLPSQMTSVMSLSILLKKRRRRRMKTLGEWQKGTMQLILKV	chr9:470294-746103_strand=+|KANK1:NM_015158.3
SEP222	HKYNLKVILENMEILKFYTFTS	chr1:186265405-186283688_strand=+|PRG4:NM_001127710.1
SEP223	LCRAIDIERPNNRLQWGL	chr10:76871393-76941881_strand=+|SAMD8:NM_001174156.1
SEP224	GPASGVLTGGARTPRETAGAERAAPGPRGTATGGRRAGPGAGRLRAAALDPTRRERPRDAEQEEEVQRAVPAGADQEDHADGRRDWEGGGGGACHHLPGARALPRVAVEEGLPGDPVAEREDHDHIPPEAVHRAGAAV	chr11:65686728-65689048_strand=+|DRAP1:NM_006442.3
SEP225	EVRSFSGNPAVEEGTTQEN	chr20:306239-310867_strand=+|SOX12:NM_006943.3
SEP226	ARGPGPGEQAAPGPAAAPAEGRVHCGGAARPARATDGAPRAGGGGRQGGAGHPPGQSPLIRDCPPAACLWHPLGPWPQPLPGT	chr1:228395861-228566575_strand=+|OBSCN:NM_001098623.2
SEP227	LDPGQDARAHIHSETLVTQSRHRAVGGGR	chr15:65488337-65503840_strand=-|CILP:NM_003613.3
SEP228	PPGGEAASTVRTAQTAGRAAWRRRICSRPPTCCATSR	chr17:3827163-3867758_strand=-|ATP2A3:XM_005256658.1
SEP229	EIHKKLKKILEMELIQE	chr1:78409737-78425885_strand=+|NONANNOT
SEP230	FIGSLITYPKPSSVLGNWETGVVSAIVELVKI	chr19:522521-522833_strand=-|NONANNOT
SEP231	FQYMEINTAGQSLERMGVENEKKLVVRLVRIVVFAHF	chr2:99862519-99863895_strand=+|NONANNOT
SEP232	SSSPKQPQNYMALVLITTRLDKPQRLKKWVLSKQSLCMWTKKGPTIQTNLKSHLIFFLWGTAFPNYVTLYVWLNLHFSTLSSQGQRTECPKS	chr17:40970559-40972008_strand=+|NONANNOT

SEP233	IISYKSTLLNNHIIKIIARKWTIFTMFCKLASVWICTLLVKYI	chr11:14665294-14895861_strand=+|PDE3B:XM_005252972.1
SEP234	KYNLQMIQCHFIDSFLLFLTLYSIPLCGPNMIYSTTLCMSL	chr14:27991709-27992439_strand=+|NONANNOT
SEP235	AAGGQAACGLAQSRAGAGGGWTQGHTGCGSEQAAGRGGERRKGVLTDGTEPARWAPGTSCGGRRRAGRVGAGHRARSGRSPWRLELPALPRRPRVEREPGRERAGLGVRGVQGARPGPWSWSSCAGRHGTESLPARGP	chr4:1803098-1810596_strand=-|NONANNOT
SEP236	MGLSCIQVEVCLVAGKQSRKKETLGLLVQAERWGLDWRGGF	chr2:74257245-74259066_strand=+|NONANNOT
SEP237	MVCLEVRFPSARTSWPPHTVQDVWFKMHH	chr17:37682110-37691204_strand=-|NONANNOT
SEP238	MHRLHFSDRGDNRVTGFEVTPGERGQKVDQENHSCLGLQSQGPILDLVKSNS	chr17:37710622-37710961_strand=+|NONANNOT
SEP239	WWCTPVVPAIQEAKVAGSPEHKSSRLQ	chr7:757156-757313_strand=+|NONANNOT
SEP240	TLLASRLPTMHSAAHKLNHWMGEGTMAQRGQVTCLRSRSKLTTITFGLAPPTSPGPGPKHLPQGTAPQSGRGG	chr3:14520433-14530859_strand=-|NONANNOT
SEP241	LAGLLAFIGQRTKDQ	chr17:35684526-35684974_strand=-|NONANNOT
SEP242	QTRVATVSNNILCISKLLEERT	chr16:8742491-8744671_strand=+|NONANNOT
SEP243	KDLSFAIQINPWPDQI	chr6:104975101-104975201_strand=-|NONANNOT
SEP244	PGVALSSLPRCQRGKQMVAPG	chr6:31606802-31611451_strand=+|NONANNOT
SEP245	MRDSLLLGVHYLRPFLVKELRTLKCKMQDENVSGEALSG	chr19:23921996-23938778_strand=-|ZNF681:XM_005259770.1
SEP246	MICYTSQLVLGYHLVTDITKHWYF	chr9:2039912-2046006_strand=+|NONANNOT

SEP247	AWFSSAPPGVSGPGPALIQPWEQLSSQQQPREGARLAGRDEGGQSGQKKQDMPGQWSREQACRAGRGQEVGWSHK	chr16:67963770-67967286_strand=-|NONANNOT
SEP248	TYFINLSIILIFYYSFIIREFVEHLFYVIDTRNEIVKKENLLPRNIHSGIKV	chr17:68010245-68038237_strand=+|NONANNOT
SEP249	KTLLLMCMKLLVPLSNWRNDFSFKKNYSGIHLLFKIHWVNHLYLE	chr6:143771955-143810369_strand=+|PEX3:XM_005267181.1
SEP250	MQQRQERQSLENVKVMKCAGLD	chr17:20056612-20057839_strand=+|NONANNOT
SEP251	MAGGLGCDVCYWFVEDTQEKEGILPERAEEAKLKAKYPSLGQKPGGSDFLMKRLQKGYFDSGDYNMAKAKMKNKQLPSAGPDKNLVTGDHIPTPQDLPQRKSSLVTSKLAGGQVE	chr1:150581888-150601599_strand=-|NONANNOT
SEP252	MSQKQEEENPAEETGEEKQDTQEKEGILPERAEEAKLKAKYPSLGQKPGGSDFLMKRLQKGYFDSGDYNMAKAKMKNKQLPSAGPDKNLVTGDHIPTPQDLPQRKSSLVTSKLAGGQVE	chr1:150595298-150602077_strand=-|NONANNOT
SEP253	MSTGLRLAESRVEPALEKQAQLEEQLRDKVLHEKDLSQQQMQSDLDKADLSARRVPGGCCMRQASLQKSDRAGPGSEASTEAESGEGSGRQGPHREA	chr1:16905808-16970994_strand=-|NONANNOT
SEP254	LLEITSSVIFSSFLLQEASEAYLVGLFEDTNLCAIHAKRVTIMPKDIQLARRIRGERA	chr1:226256967-226259277_strand=+|NONANNOT
SEP255	SRIVPLSLCFVYSECTKDGYELSPTAAANFTRRNLADCLRSRTPYHVNLLLAGYDEHEGPALYYMDYLAALAKAPFAAHGYGAFLTLSILDRYYTPTISRERAVELLRKCLEELQKRFILNLPTFSVRIIDKNGIHDLDNISFPKQGS	chr1:36064590-36107159_strand=-|PSMB2:NM_001199780.1
SEP256	VFFCLSEDKKNIILEEGKEILVGDVGQTVNNLYATFVKMLPYKDYRYTLYDTTYETKESKEEDLVFIFWAPESAPL	chr1:51623500-51624038_strand=-|NONANNOT
SEP257	LCEHTRAGAVLYTRN	chr1:91276134-91276678_strand=+|NONANNOT

SEP258	MTSWPGGSFGPDPLLALLVVILLARLILWSCLGTYIDYRLAQRRPQKPKQD	chr11:68925212-68926307_strand=+|NONANNOT
SEP259	MSYCFDRDDVALKNFAKYFLHQSHEEREHAEKLMKLQNQRGGRIFLQDIKKPDCDDWESGLNVMECALHLEKNVNQSLLELHKLATDKNDPHLCDFIETHYLNEQVKAIKELDDHVTNLHKMGALESGLAEYLFDKHTLGDSDNES	chr11:77445415-77445967_strand=-|NONANNOT
SEP260	FSPPDLQGEPSGNRQESRRSAGVQAGSHHRVHGAEASIQAGIYATRSGGTLVLVGLGSEMTTVPLLHAAIREVDIKGVFRYCNTWPVAISMLASKSVNVKPLVTHRFPLEKALEAFETFKKGLGLKIMLKCDPSDQNP	chr15:45117467-45154252_strand=-|NONANNOT
SEP261	VERSAAETVTRGGIMLPEKSQGKVLQAIVVAVGSGSKGKGGEIQPVSMKVGDKVLLPEHGGTKVILDDKDYFLFRDGDILGKYVD	chr16:74646473-74646748_strand=-|NONANNOT
SEP262	SPPTNLTFISILTKQSVVIPHIWSSSKPVSGDTLRYGWIF	chr18:32947243-32947540_strand=+|NONANNOT
SEP263	GNAICIQTPGLRGQRRDPPLPPVPEAGSGAGDKPGPARGLGFRDPLVLEGPRAPERQGSGHGDQRARNLRGRRGLEAGSARSGSFCPSVLGDRTAPGR	chr19:49458275-49460071_strand=-|NONANNOT
SEP264	MDKPCGCPPGVCDHGTGDRRDPWYSTVGLLPPVRAMSQRNLNAKTEQGPTGVTMTSNPITWGQIKKTTQEAEKLLERQGQAKTPDSMFLAMLAVVSCASIGSGEPPTGN	chr19:58816741-58827140_strand=+|NONANNOT
SEP265	MGKGSFKYAWVLDKLKAECEHGITIDTSLWKFETSKYYVTIVDAPGHRDFIKNMITETSQADCAVLIVAAGVGEFEAGISKNGQTQEHALLAYTLGVKQLIVGVNKMDSTEPPYSQKRYEENC	chr2:107313599-107315077_strand=-|NONANNOT
SEP266	GLWISHNKHTKKLLKSAKKKCNQHILSDWVWPLTSVFYYEILNSPEKACCLAKTAFDEAIAELDTLSEESYKDSMLIMQLLRDNLTLWTSDTQGDEAEAGEGGEN	chr2:127314648-127315784_strand=-|NONANNOT

SEP267	GIKQGVPDFKGKTSASAQIYII	chr2:242272175-242277881_strand=-|NONANNOT
SEP268	MQIFVKTLMGKTITLQIEPLDTTENVKAKIQDKEEIRLDRQTLMFDGKQLEDERTLSNYNIQKESTLHLVLRLCDVIKEEFLYNSQEE	chr2:48109321-48110972_strand=+|NONANNOT
SEP269	MLVRVVLNSQPQVICPPQPPKVLGLQA	chr2:61275508-61277771_strand=-|NONANNOT
SEP270	MSLRNLWRDYKVLVVMVPLVGLIHLGWYRIKSSPVFQIPKNDDIPEQDSLGLSNLQKSQIQGK	chr20:10385838-10414846_strand=-|MKKS:NM_018848
SEP271	MSGSCQRSGEDKKQEEEATAACGRLAGVPEAKQGPKADSDSDLETEGARGRGQARLLPLGASPAGVVGGGLAPPRRQETSVQQGT	chr22:21368073-21368526_strand=-|TUBP3FP:NR_003608
SEP272	MAPWSREAVLSLYRALLRQGRQLRYTDRDFYFASIRREFRKNQKLEDAEARERQLEKGLVFLNGKLGRII	chr22:39898321-39914136_strand=+|MIEF1:NM_019008.4
SEP273	MQKEDPHVTHLQVAQDTVTPEAAQISSEEHPQEKQA	chr3:75673790-75674212_strand=-|NONANNOT
SEP274	QEKLKLEAELGNMQGLLEDFKNKYEDEINKRTGMENEFFLIKKDVDKAYMTR	chr5:60040072-60040365_strand=-|NONANNOT
SEP275	MQASIEKGGSLPKVEAKFINYVKNCFRMTNQEAIQDLWQWRKSL	chr5:93018209-93019492_strand=-|NONANNOT
SEP276	LPDHLNSRLEESLVMQEEVWRKGN	chr6:127588051-127664224_strand=-|NONANNOT
SEP277	MIKGVTLGFHYKMRSVYAHFPINVVIQENGSLVEIRNFLGKKYIRRVWMRAGVVCSVSQAQKDELILEGNDIELVSNSAALIQQATTVKKKDIREFLDGIYVSEKGTGQQADE	chr6:64325724-64326136_strand=-|NONANNOT
SEP278	RVGAELNLWLLKLHWLALDVSLSNPLDFVVVVVLFCFRLLAA	chr6:80253441-80254311_strand=-|NONANNOT
SEP279	METLQSETKTRVLPSWLTAQVATKNVAPMKAPKRMRMAAVPVAAARCDSSGQKTPANLTPCDKDCVLHE	chr7:134844506-134855399_strand=-|c7orf49:MRI-2

SEP280	MAEALNKYKLSVKGKAQLGVQAFADVLLVIPKVLAQNSGFDLQETLVKI	chr7:65216074-65234525_strand=+|CCT6P1:NR_003110.2
SEP281	CGITASSPLSVKGNTFGYLLKLLIITVLIPNCT	chr7:91826459-91831812_strand=+|NONANNOT
SEP282	MMMHSLQRGTFKTQNTRSRLQLRDSEAKLEGLRKDEEPPLREEAAAAAAAAAAATPPLPHLPGNNAASDIQAVRWELLQTHAQHEGAEATGCDGHQPGAEPEGPGGPHP	chr8:38001128-38009539_strand=-|STAR:XM_005273620
SEP283	MRKKQQIENASKRNKWKLSTKQHVIYSNKKYISFWAQSINPVTEKRIQVEQTRDEDLDTDSLD	chr9:15470968-15475652_strand=-|PSIP:NM_021144
SEP284	KNSLLDLTPLPSSDTRLLSSQRS	chrX:44168529-44172000_strand=+|NONANNOT
SEP285	MVEITSKHEERQDEHGYISRCFTRKYTLPPGVDPTKVSSSLSPEGTLTVEAPMPKLATQSNEITLESRAQLGGLGAAKSDQSAAK	chrX:49089935-49090674_strand=-|NONANNOT
SEP286	LQLETEIEALREELLFMKNHEEEVKGLQAQIASFRLTVEVDAPKSQDLAKIMADIRAQYDDLAGKNREELDKYWPQQFEENTTVVTTVRRGWSC	chrX:91714698-91716013_strand=+|NONANNOT
SEP287	MMMGCGESELKSADGEEAAAVPGPPPEPQVPQLRAPVPEPGLDLSLSPRPDSPQPRHGSPGRRKGRAERRGAARQRRQVSGGGWPPARDGLAPTWSLPCPLLPGPLPPDAALPGAVRAAACGAAGAGDARAEEQPGLGPGAAGRSREPL	chr7:100032991-100034106_strand=-|NONANNOT
SEP288	MAAGRGRGRADGAGERDAADCAARRAEVAESRAAPGALPEAAVGPRGPSRGRGEAAGLGLGLAALKLRAGAGARGGSGARGGGALPARLHLQGLRD	chr9:139256352-139264369_strand=-|DNLZ
SEP289	LGAGAVGSQTRLSASSHFSQGGCACAQLPGRAGRRGLKSLVPSLERERRAPQTSVPASGEEAGKKDAASGEHPGSKTGPGLSTVGSVTRLGKAGAPAVGLLLANERSPRRRRGANDPTQDGE	chrX:16859470-16888534_strand=-|RBB7

SEP290	ECLAGSGFRVRPCSGFARSSAPAGNQAPSEARTAPGARTGGHAVPEGGGRGSRRGGGGGGRGGRQLPPAAAVGDAGQLGRGGPAGGPDRRDAAAGRGAGQPGLAVRAPGGAAAGPGAPGCGGAGGQGPAPGGAAAAAARFG	chr10:99092201-99094454_strand=-|FRAT2
SEP291	MATPGLQQHQQPPGPGRHRWPPPPGGAAPAPVRGMTDSPPPGHPEEKATPPGGTGHEGLSGGAADVASGVGSGRHRARLPARP	chr9:139557342-139567132_strand=+|EGFL7
SEP292	MGSGCRCGGATSRRRTPSWTPSSASLRARAVSSSSPTLGWRTAPSSTATTASASCAATRGPR	chr7:150646564-150675053_strand=-|KCNH2
SEP293	MRLVARLQVGPADTQPRVSGEADGESSSGSRDSGLLWCHQPPPQQGGPGEGQEQLQRLDVQTDGGPVCAVPVDRWPVLPREDQEGQQL	chr9:123611620-123639498_strand=-|PHF19
SEP294	MSLFDENELLRSHWYLYWGNIAYKQEAYSLSGENFFMSETENSCSRLCHPFFSRQKIPKSCNQRSLHLIDKATNKPKCLSMSTAACQTSSIATRCPV	chr14:103799905-103808641_strand=+|EIF5
SEP295	SGQHGRAAAAAPCPPPGSRPGSSAAVGPRPGLESRVPRQAREGAAVHGQQASGGPRRGWRPSSAELTIETANPYL	chr16:89574814-89623783_strand=+|SPG7
SEP296	ITQARLSGQHGRAAAAAPCPPPGSRPGSSAAVGPRPGLESRVPRQAREGAAVHGQQASGGPRRGWRPSSAELTIETANPYL	chr16:89574814-89623783_strand=+|SPG7:NM_003119.3
SEP297	RGGEEAEPRSAAGGWGRKSEVSADVRVESGRSGRLGAEVRLGSLSAIVDPRSREREGEEERASGKDGPLPPTPEREALILGSQRTAAAAAAGTITRPRATANCCECTGRGPGSGGGGGSRVAVKNVSH	chr8:64080459-64125260_strand=+|YTHDF3
SEP298	PSPPSAAAGARAAHPHHAQVHPAVALQPARGVGGQAALFAAGRAGGDLPLQPQPGGAAARRQPAARAAQAFFPAAELAQAGPERQRDPAVASRGGQLHAAGGAGRVPERYP	chr8:144873093-144897592_strand=-|SCRIB

SEP299	ERAVTATAAAEEAAAGPGPVRLSAPRGCESAAAEAAAAEEAAAGGGVGEPAPGRRGAEDEAAAWRSWRGGGRRAVAAAAAAAPDPGGRARTHVSR	chr10:98277876-98346768_strand=-|TM9SF3
SEP300	AGLGCDRRLRLFFGRVGASGRLGRVHAAWRRRLIPPSTPGSSDVGQLCAGACDPRGGLGAASIAADGAPRGPGEYQPGKGSARPTTADPGRAGGTEVREPAGSSAAAEAEDETGCTP	chr4:122734431-122745077_strand=-|CCNA2
SEP301	PSPRNVVTSSEAWSSPKLGRKRKKKSQKKFSFLESQTRCGTEEGVKARGSGLQDRCLESPFPGHVGAHLAAPEAAGARQSPSGEGDPPRHPGATTGPRSSTPAPPQGQFLPPSI	chr7:100464771-100471014_strand=+|TRIP6
SEP302	MKSREGSVHPQVEIANLLLIQSSLANLLSLQDPAGFALLALKWKNIWWSTSAHIATLPWPKEAYLMTMSSSCLLDTTSQWWSFQQRW	chr10:101992050-102027406_strand=-|CWF19L1:NM_001303407.1
SEP303	MPSVPKELSSAELPPQPAAGQYGPGDSADAPNPWSREPRDRSGHLSQTPRSPEALLRGRRRGHLCGVPRIQEPQTAQRGAIGGGGAGVQGQTAGARGTTEEAPGGSAEDESQGGEASDRTEEPDEVRAGSGGLGVWATDTVSG	chr5:180650039-180662529_strand=+|TRIM41
SEP304	MAPPALQRGQRVAAVAVGSQAVLQILSRVSGRQAPPQPSGSGGVGAGPVVVPDGGGEGPQPHPSSSQSPPDLPLKAK	chr19:42701592-42724264_strand=-|DEDD2
SEP305	MSAPYSAAPPESAPPSPAPKTSRSPPPPGPGSQTPDFSRNPPLVQDTVSGKGWPTSRSRFPPRERGDPGDSSGQEVPASRPHQARNVRLWESALCIATAPEPQAPSEPTQI	chr1:150521860-150532550_strand=+|ADAMTSL4
SEP306	ALQYQTAFGKWYESLLNNRLIVSKQHVLTLKLNGRITILACGNLTGMNYLKKLKMKSLMKLSV	chr3:193310939-193412467_strand=+|OPA1
SEP307	MAVAGAAAGAGGRRTRMVPEPGDHAGVAAGEAAGRRAEASGEGAAHRRVHGQDATDDCELAAAAAGELGEGPG	chr19:13058987-13068000_strand=-|GADD45GIP1

SEP308	KNTTQESLEKGPPSVLGKGRSRSRCPRTTRTS	chr22:41697661-41756143_strand=+|ZC3H7B:XM_011530016.1
SEP309	MERAEPLQTAGQAGRGSLPLPSPRPPSPPGLESPPAPAPVPHRLPRRPRALPCPPSALR	chr11:118964582-118972602_strand=-|H2AFX
SEP310	CCLKGTWYPNKAGNLILLQGHTV	chr3:124944633-124949368_strand=-|ZNF148
SEP311	MLRYCFFPKMCFSTTIGGMNQRGKRK	chr12:48732236-48745011_strand=-|ZNF641
SEP312	MDHQPGQTAKASEIQSTGGQRDPQPERERPANSLIDQCSQRDHQTEPPKDRHLC	chr2:131113651-131132956_strand=+|PTPN18
SEP313	AVFFKNLLAFARSMISDASHIY	chr6:80194734-80199064_strand=-|LCA5
SEP314	MRSSFVLWERPALGEWVSSQPTSHLPSALCFLGFFPPVLFLKTSLSLAELSFLNRSAFAIDPGQQVKISF	chr16:86563765-86575431_strand=-|MTHFSD
SEP315	MEGVFPSVKLTTWLPSCEDLTLPGGRGRLTPSIIAVTLPSLVVSLLGSVC	chr7:158799383-158814542_strand=+|LINC00689
SEP316	MADRAPRQPTSLGSSPQRCGSPPSAPPPPPDRGERIEDCLAPLCPPVVGGRGGCALSRFLPVDLSLLRSSRTAAVELVAGGVCRSPSQEN	chr1:155532795-155708399_strand=+|ASH1L-AS1
SEP317	LVLFSFSASWLTVLPSSLSSYGACSRFYALIFLHKRYRSVVKLGIIPLQCLLCAGLRVGVINNGLEASSSP	chr17:35441928-35444379_strand=+|ACACA_antisense
SEP318	MGGETDGAGRTRDGADGGGGAGSAGQIQRKSGGSAQGCEAGAPRGPSGTQEMGPLSRTQERSSHGASGLAGDGAHARGLLAPQHPAPRLQGDPRAPGRPRLP	chr19:3610043-3626771_strand=-|CACTIN
SEP319	DQRSPGNCLIGKTFLTGGAPEAARRNQRGDAAAGAGPRAAAADGAGAEGAGGAEGQNRGADGSAAPKRAGPGQQWSRAPEPGAVLAPAEVVLRAVWGVRGGLPVPARGEHCGDRGTPERPQVN	chr22:46973128-47073068_strand=+|GRAMD4
SEP320	MAGRARSVQIILQESQTTPFTSPPAGQHRLLVSGSPSAETLPLRWGLDAREPFSAKSLKRSEAAPRNRGGSEASPATLQTGPPPRPPSPQS	chr5:34914296-34925392_strand=+|NONANNOT

SEP321	DAAIRHSYKTSSGSCFKCQKSGHWAKECPQPRIPPKPCPICAGTHWKSDCPARPTATPGAPKALAQGSLTPSQIYSA	chr22:17092426-17095991_strand=+|NONANNOT
SEP322	RSSSSQVEERKRQREEDAGGGGGERPLPGVGSRGGAGPPGAPGCGGPHGRRPAPRAPPELAPGPPAAADARRGAALGRDRRRDSGQRPASRLSAPQPGPDILQAPARGELPGAERLGS	chr19:54693858-54697432_strand=+|TSEN34
SEP323	VLLKNEQTELLYNKSQPF	chr12:118649944-118650075_strand=.|NONANNOT
SEP324	RKRRRRRRTPCRPKRPLSRRSGVKFPKILEDFLPPSSSRPQS	chr2:85132483-85133801_strand=+|TMSB10
SEP325	MPPKFDPNEIKVGACSGCGRGCGMEHPSALPRVQSFPRMGLLKPLPPRDLPGVAPPRPSLSLSGP	chr9:130209955-130216851_strand=-|NONANNOT
SEP326	MSRGTMPQPEAWPGASCAETPAREAAATARDGGKAAASGQPRPEMQCPAEQTEIKRSS	chr5:14664778-14699800_strand=+|NONANNOT
SEP327	GRGPTAPAVRDPNAIPAQRSHGSYRQHERGGPRGRDPQPETQRSSCTARAQHGVHSNTASPGLPAGAPRATAEIPQ	chr7:150778172-150779835_strand=-|TMUB1
SEP328	MVALPPAGPEAEAGAAELHVQTRSETALLALDRPLLPPALRRPQTAQPGGMEARKQGGFVQVSANALAVTGLGSPQSGGAATLAAQARLQPVHLDVWGEHERGRCGGPASLPQPQRVLPAQAEAAGPACLWPAQRD	chr22:32014539-32021921_strand=-|PISD
SEP329	GEEGWGGCGGRGAPPGRKLNINQSIAVSTATQRRRGCEGGRGTGEGRVGGREEGRGRGESAVGAG	chr2:200322928-200323580_strand=+|NONANNOT
SEP330	TRAGQGEPASEAQPQPLSEPGPQTPEPEPRPAQPGPAERLPGQATTQQTFDQRR	chr19:56165091-56185542_strand=+|U2AF2
SEP331	CCYVDGQQQANKLVSAVLAGKEVLKNGHSPGAVARTFKIPALWEAEAGGCLSTGV	chr1:7863564-7864928_strand=-|NONANNOT
SEP332	MPEPSLGESHSPHLPQPQPKPAVAAATLHLPAAPEGPHRQQQQAGSPAP	chr7:100169852-100183655_strand=-|LRCH4

SEP333	SPGEEDGPAGCVSHHRGAQELIGASLHTARCDPRRGPQFQQLQQQAAGPGGLGPGHSHGRRQRAPCLPRGCQRQCGLGCFWHGQPGGGGHHGGGGRGRGGRRRRLCDGGVPGHTQPWGS	chr1:228544743-228549628_strand=+|OBSCN
SEP334	HGVRHPAWAFRLCLPCPSRRVTTSARTQQKGQDTQRRWRTHLGTEGQCDLPGAGGPARAFPEETAKPRPGTAEEKQGGGRRGPVPSSSAVPGGRSARLSA	chr10:11925853-11937442_strand=-|PROSER2-AS1
SEP335	GACVGLATRLANPPRPARPPRLRTPEVPTRTSDAPRPSATPPGADPLNSAGPGARGPHDPRAPARTPRAPAPARVPDAAPAPTHRAPQQGPEPPAAGRGGAPR	chr19:55737961-55770381_strand=-|NONANNOT
SEP336	MCCVKLVTSWDGQNPPRSRLKLFLWPYKVVISLGLQKLALERQAPLLCPF	chr12:12966292-12982381_strand=+|DDx47
SEP337	GRKRGEGFGERRGLGDTEPSGAGAGAQAKTKAAPGPTAAAAAQASAAARRQPREPLGSRPPAQPPPPREPVAGSRSGRKTTEGPSVRATPRGPNEQPEAAAAEDGDSDDAEAEKGTPGPAP	chr2:231577583-231685792_strand=+|CAB39
SEP338	AWHPSSSVFPSLACDPPFPLSHLPLLEASGGIYKKKRLLIPPEKS	chrX:5214450-5216144_strand=+|NONANNOT
SEP339	FGQCQSYVGVTSAEEETTGSRITCSPTTDSYGIPQGCKKK	chr1:175913967-176176388_strand=-|RFWD2
SEP340	DYILSLEMFSILLWGFGINVSSLIMELLFPEAS	chr3:88101102-88108113_strand=-|CGGBP1
SEP341	FFHPETAVAGARTEAAAGARLASGLRVGPAEPDAAPGAGRRWCLAASGPPRAATSEPSATAGVRRAAGPAGPGARSCPPGRGGADQNNVQHQPPGEPEGVHQQSASPGGLHDQRKRHGHSFPDPGLLLQNQGD	chr7:66386203-66420643_strand=+|TMEM248
SEP342	VLKCVCAASVHDASSSPLGPPRVHFLDHTHIPNKYLWWWVVYSSRLLGVIVPQNM	chr16:87435666-87438903_strand=-|NONANNOT

SEP343	LIPAHTAHVEFACLVYVLDLITDACTIKPLFNKVLQNDNAFPKI	chr9:130128866-130129660_strand=+|NONANNOT
SEP344	KRNKKKKKFWTRCSWEGSCPGGRPGNEHRPAAGREPGRASPGEAGPAGGAAAGQGAPREGPVPAADAKRPGQG	chr1:16905808-16970994_strand=-|NONANNOT
SEP345	MPARRLLLLLTLLLPGLGVSDRGAWGGGQLATAGSGPGQRRGAGAGVRAGSATAAARCPVSPAVGGSGRA	chr17:62205639-62207524_strand=-|NONANNOT
SEP346	TASKNIKQYLQIQGEKHTSTIVVGAFNDRTEKTDTEVLINTMSKLKI	chr1:4036227-4073316_strand=+|NONANNOT
SEP347	MEWWGQCMTEENSRQKGLFQKKKVYKWLLCNVERCSPILVI	chr1:157243513-157253900_strand=+|LOC105371455
SEP348	DLKPVFLLLLSIRDCQADLAVERRLWAASLEA	chr11:3532972-3542051_strand=+|NONANNOT
SEP349	MRSWAKRGLATCLRSYSQHCLILKPMNKVAFIPTEAWYSAGRQTHKQVQLAHLASRSASMDSTKNGFKILGKKQIIKQLKNTNFKI	chr11:82783129-82805398_strand=+|NONANNOT
SEP350	MLHSRKRELRQVLITNKNQVRLTLLLTLG	chr11:65266554-65273981_strand=-|NONANNOT
SEP351	MCLKSVMLTWGPGCPWAGADGTSTLIKFLLAPEENKVTLLPLL	chr16:3054772-3058645_strand=+|NONANNOT
SEP352	NHESFLNSVYRQVRIFLSEPERIKGGFELDKIELKVQTNGGRIVKILQRIPCVVILTKFKKVLHGFSVNKKLK	chr19:23278060-23286908_strand=+|NONANNOT
SEP353	NLGSPRRIRRIWSPRLWKTLPMMGMIRNGER	chr2:107137814-107160732_strand=+|NONANNOT
SEP354	QHSDKGSSQSKVNLEQVNEETLKTGGLRKMHPLRACSEGSAELIQGKEILPQTIDHSFNLSHESLLQLLVRGNCRFILDLHCNITEFSNALWLRQLYNQLDVVLSDTTLSHFQFCFPFVFLFSFSFSLFLSYIKLKNVFICCHRQIYMNQVDQETK	chr3:107852804-107857456_strand=+|NONANNOT
SEP355	VHCQMSSNILKEIFLSEQHVSAMSLKYSVNQGINRCAVPRLLCSYRAQEE	chr15:31059077-31065344_strand=+|LOC100288637

<table>
<tr><th></th><th></th><th></th></tr>
<tr><td>SEP356</td><td>PATAACFCTAWQAKNGFHIFEYLKKIFQEYHFVAHENYMKFKFQCPQIKFYRNIACSLI</td><td>chr21:35345400-35353552_strand=+|NONANNOT</td></tr>
<tr><td>SEP357</td><td>TIARTKNQTPHILTHRWELNNEITWTQEGEHHTLGTVVGWGEGGGIALGDIPNAR</td><td>chr1:144672440-144676693_strand=+|LOC105376128</td></tr>
<tr><td>SEP358</td><td>SRLSATSASWVQAVLLDQHQRPE</td><td>chr6:141167105-141170052_strand=-|LOC102723724</td></tr>
<tr><td>SEP359</td><td>TYKIKDFKTFTISSTAIYYELQRGTRSTEGA</td><td>chr1:995566-1002621_strand=+|NOTANNOT</td></tr>
<tr><td>SEP360</td><td>MGEMERGEIKEKKVIPET</td><td>chr17:41380977-41381147_strand=-|LINC00854</td></tr>
<tr><td>SEP361</td><td>GRPSPSLAAALQFDLRLLC</td><td>chr1:61105899-61106128_strand=-|NONANNOT</td></tr>
<tr><td>SEP362</td><td>VASGIWWGLCISLPPQLGIGLCCFTSSTSGAPGDCHSLLPCDLQVLGDAQLRCQDILEAGKRDGVSLLLPRLECIIPISAYYNLRLPGSSDSPTSAS</td><td>chr19:23449149-23457064_strand=-|IPO5P1</td></tr>
<tr><td>SEP363</td><td>MRTASPYSRPEGGQKADSLQAARPRLHRPHPRPTRQLRTEPSPSRGCR</td><td>chr2:66649993-66662138_strand=-|MEIS-AS3</td></tr>
<tr><td>SEP364</td><td>AHHCPVGSPFWAGQGQSRLPNVEGGVEGEAPVGTGAARSVCRPAGVPGGRGLGGPRTRSRRLARPAPGNEGLSTWASGWGGCTGAPSSASPLALRSISHQG</td><td>chrX:118466927-118467907_strand=+|LOC101928336</td></tr>
<tr><td>SEP365</td><td>MGDQPCASGRSTLPPGNAREAKPPKKRCLLAPRWDYPEGTPNGGSTTLPSAPPPASAGLKSHPPPPEK</td><td>chrX:56755414-56843979_strand=+|LINC01420_NoBody</td></tr>
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Supplementary Table 2. Detected microprotein peptide sequences from human interactome data[1].

Detected peptide sequence	SEP #
LAGRDEGGQSGQK	SEP247
DEDLDTDSLD	SEP283
CQDILEAGKR	SEP362
MQASIEKGGSLPK	SEP275
EAVLSLYRALLRQGRQLR	SEP272
DAASGEHPGSK	SEP289
MADDKDSLPKLK	SEP71
LDRQTLMFDGK	SEP268
YWTVQNVEMKHKR	SEP153
GTRPEDSSVLIPTDNSTPHKEDLSSK	SEP215
MQASIEKGGSLPKVEAK	SEP275
EFLDGIYVSEK	SEP277
MTNQEAIQDLWQWRK	SEP275
SVCRPAGVPGGRGLGGPR	SEP364
EPSGAALR	SEP2
GPTIQTNLK	SEP232
IVVDELSNLK	SEP215
TLSNYNIQKESTLHLVLR	SEP268
QVEGTGTPK	SEP61
GRPSPSLAAALQFDLRLLC	SEP361
SLLTPDVNFK	SEP146
EGSSGPEAPK	SEP164
TKYLCNYLITLVNR	SEP7
DNLTLWTSDTQGDEAEAGEGGEN	SEP266
YPSLGQKPGGSDFLMK	SEP252
QDEHGYISR	SEP285
SVYAHFPINVVIQENGSLVEIR	SEP277
RGCEGGRGTGEGR	SEP329
NILDELKKEYQEIENLDKTK	SEP215
CDSSGQKTPANLTPCDK	SEP279
LQKAVVRVRVTIKKKKYK	SEP82
LLPLGASPAGVVGGGLAPPRR	SEP271
YAWVLDKLK	SEP265
QVQLAHLASRSASMDSTKNGFK	SEP349
SVCRPAGVPGGR	SEP364
TEMLSESKNILDELK	SEP215
KCLEELQKR	SEP255
EHALLAYTLGVK	SEP265
YYTPTISR	SEP255

YIWSSRSRRLLSSEPAEKQKGETNT	SEP189
FLDGIYVSEK	SEP277
RWRTHLGTEGQCDLPGAGGPARAFPEETAKPR	SEP334
RAAGPAGPGAR	SEP341
GGLGAASIAADGAPR	SEP300
PAGVPGGRGLGGPRTRSR	SEP364
QKDELILEGNDIELVSNSAALIQQATTVK	SEP277
ADSLQAARPR	SEP363
PVSDGTSTLSPR	SEP3
GPVPSSSAVPGGRSAR	SEP334
TRDGADGGGGAGSAGQIQRKSGGSAQGCEAGAPR	SEP318
FSFILNFPLSR	SEP123
TADGCELPR	SEP187
DELILEGNDIELVSNSAALIQQATTVK	SEP277
FCLSNDFFKSIIYIYGIFQNSNCHIKKHDNLNDLNKNTVPKIKRQL	SEP214
MKFLDLTLALRIQDGNYNGHEDR	SEP31
DETSPADAVCPGLGRDLCGSSRCCLR	SEP2
DGYELSPTAAANFTR	SEP255
EPGRASPGEAGPAGGAAAGQGAPR	SEP344
SADGEEAAAVPGPPPEPQVPQLR	SEP287
KLNINQSIAVSTATQR	SEP329
KYKGRKER	SEP82
RPTWSRCGTNK	SEP166
GAWGGGQLATAGSGPGQR	SEP345
GAGAGPHLGPQVEGGLQQVQR	SEP178
GRGPTAPAVR	SEP327
TLRDYLQLLR	SEP71
MGGETDGAGRTRDGADGGGGAGSAGQIQR	SEP318
LPNVEGGVEGEAPVGTGAARSVCR	SEP364
NGIHDLDNISFPK	SEP255
VFFCLSEDKKNIILEEGK	SEP256
DGLAPTWSLPCPLLPGPLPPDAALPGAVR	SEP287
KYEDEINKR	SEP274
IIPALLEADEGYPFEVRSWR	SEP161
QHGGSSK	SEP95
ATANCCECTGRGPGSGGGGGSRVAVK	SEP297
EFDLLSKVFQTLK	SEP162
HGTESLPARGP	SEP235
GRAEWGWAPAGHQGLR	SEP208
IMADIR	SEP286
RKGVLTDGTEPAR	SEP235
ADAPAVSPESPQKKPPFQPRSVQEAPCSPQGPPAQRPALAPPSKPSLK	SEP42
PAGVPGGRGLGGPR	SEP364

MAVAGAAAGAGGR	SEP307
STLLNNHIIKIIARKWTIFTMFCKLASVWICTLLVKYI	SEP233
QLPSAGPDK	SEP252
FILNLPTFSVR	SEP255
ERAVELLRK	SEP255
ERSCLHSIK	SEP80
EDHDHIPPEAVHR	SEP224
KEKDTLLEVLC	SEP51
QDLKWTLLVCGIE	SEP191
PGVALSSLPR	SEP244
RDAAAGRGAGQPGLAVR	SEP290
PRRGGEQPHHAAPAQEAAEKEGRAR	SEP150
FIAIIAYIKKEK	SEP112
AEPLQTAGQAGR	SEP309
GRDPQPETQRSSCTAR	SEP327
VRFAHATPEAVSG	SEP116
TAPGARTGGHAVPEGGGRGSRRGGGGGGR	SEP290
TAFDEAIAELDTLSEESYK	SEP266
TRMVPEPGDHAGVAAGEAAGR	SEP307
PSPPSAAAGAR	SEP298
GLVFLNGK	SEP272
AEEQPGLGPGAAGR	SEP287
EALILGSQRTAAAAAAGTITRPRATANCCECTGRGPGSGGGGGSRVAVKNVSH	SEP297
NEQTELLYNK	SEP323
RQVSGGGWPPAR	SEP287
GPGSGGGGGSRVAVK	SEP297
EYQEIENLDKTK	SEP215
TITLEVEPSDTIENVKAK	SEP210
RKKIEKRKSFR	SEP82
DPQPERERPANSLIDQCSQR	SEP312
RTGMENEFFLIK	SEP274
TFLTGGAPEAAR	SEP319
IVVDELSNLKKNR	SEP215
AAALDPTR	SEP224
PEDSSVLIPTDNSTPHKEDLSSK	SEP215
IIDKNGIHDLDNISFPK	SEP255
ASEIQSTGGQRDPQPERER	SEP312
HPQEPGIAGGGGER	SEP157
IPLSIVIRK	SEP116
SFSGNPAVEEGTTQEN	SEP225
WDYPEGTPNGGSTTLPSAPPPASAGLK	SEP365
PRPGTAEEKQGGGR	SEP334
MSYCFDR	SEP259

IIDKNGIHDLDNISFPKQGS	SEP255
KYTLPPGVDPTKVSSSLSPEGTLTVEAPMPK	SEP285
AGAVLYTR	SEP257
AGDFLNLR	SEP70
NILDELKKEYQEIENLDK	SEP215
IESEGGGEGWGR	SEP175
APARTPRAPAPAR	SEP335
GGEIQPVSMKVGDKVLLPEHGGTK	SEP261
LGAGAVGSQTR	SEP289
RAGPGAGRLRAAALDPTR	SEP224
NLRAMSEFWKEINWNIPLLSWQPPK	SEP203
FINYVK	SEP275
SFQLKGDGVFVLKSGR	SEP196
RNLADCLR	SEP255
QLEDGGTLSDYNIQKESTLHLVLR	SEP210
CQDILEAGKRDGVSLLLPR	SEP362
QVSGGGWPPAR	SEP287
SPGNCLIGK	SEP319
LLAENLPIDFLNIRKIPN	SEP180
SGHLSQTPRSPEALLR	SEP303
APERQGSGHGDQRARNLRGRRGLEAGSAR	SEP263
HEERQDEHGYISR	SEP285
QSKTPSQKKK	SEP135
GPHDPRAPAR	SEP335
VAGSPEHKSSR	SEP239
AVAAAAAAAPDPGGR	SEP299
ITRVKIHQHLALGALR	SEP119
NQRGDAAAGAGPR	SEP319
ATPPGGTGHEGLSGGAADVASGVGSGRHR	SEP291
AMSQRNLNAK	SEP264
AAACGAAGAGDAR	SEP287
YTDRDFYFASIR	SEP272
LRAAALDPTRR	SEP224
TAQTAGRAAWR	SEP228
PGQGNSRSSRSIRSPEGR	SEP157
QVLITNK	SEP350
SRLQLRDSEAKLEGLR	SEP282
QQQNSNIFFLADR	SEP215
RVTIMPKDIQLARR	SEP254
AGAPAVGLLLANER	SEP289
DALKVAGRQTDLL	SEP192
VTIMPK	SEP254
IMADIRAQYDDLAGK	SEP286

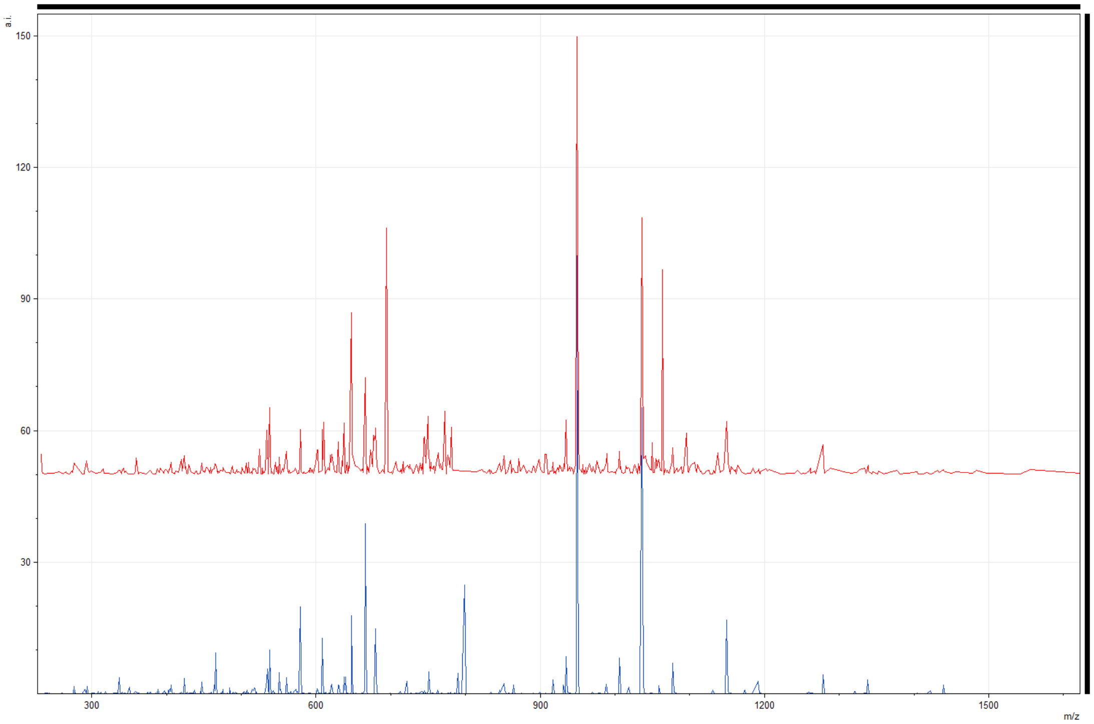
TLSDYNIQK	SEP210
MGSQHLPLR	SEP38
FYALIFLHK	SEP317
MGGETDGAGR	SEP318
ESTLHLVLR	SEP268
ESTLHLVLR	SEP210
TITLEVEPSDTIENVK	SEP210
RVTIMPKDIQLAR	SEP254
LVTSWDGQNPPR	SEP336
TGGLRKMHPLR	SEP354
PAPRAPPELAPGPPAAADARR	SEP322
CLSMSTAACQTSSIATR	SEP294
IEDCLAPLCPPVVGGRGGCALSR	SEP316
ERAVELLR	SEP255
GGSLPKVEAK	SEP275
ELDDHVTNLHK	SEP259
MRAGVVCSVSQAQKDELILEGNDIELVSNSAALIQQATTVK	SEP277
TAAAAAAGTITRPRATANCCECTGRGPGSGGGGGSRVAVK	SEP297
ATATRQEDRSPEGGWR	SEP61
VTIMPKDIQLAR	SEP254
MYLLFAAPSLNLQSK	SEP67
ATANCCECTGR	SEP297
IQDEEGIPPDQQRLIFAGK	SEP210
SPGNCLIGKTFLTGGAPEAARR	SEP319
TGAGILLLR	SEP79
TEMLSESK	SEP215
RAPQTSVPASGEEAGKKDAASGEHPGSK	SEP289
YSVNQGINR	SEP355
KSMSATQQGAMAGAVR	SEP38
RSEAAPRNRGGSEASPATLQTGPPPR	SEP320
RVEDEVNSGVGQDGSLLSSPFLK	SEP71
QLRYTDRDFYFASIRR	SEP272
IVVDELSNLKK	SEP215
GAEDEAAAWRSWRGGGR	SEP299
MITETSQADCAVLIVAAGVGEFEAGISK	SEP265
LLLLSIAPGDGSSEK	SEP132
ESEIIKK	SEP53
VSSSLSPEGTLTVEAPMPK	SEP285
KSSLVTSK	SEP252
QRAPCLPR	SEP333
AAACGAAGAGDARAEEQPGLGPGAAGR	SEP287
TPRETAGAER	SEP224
PAFVNENIPDITKPK	SEP65

LGKAGAPAVGLLLANER	SEP289
MAPLGLKDPLSSWLTPVAGK	SEP77
SSRTAAVELVAGGVCRSPSQEN	SEP316
QIIQGAIK	SEP158
APVPEPGLDLSLSPRPDSPQPR	SEP287
KILEMELIQE	SEP229
TAFDEAIAELDTLSEESYKDSMLIMQLLR	SEP266
EGAAVHGQQASGGPR	SEP296
EYQEIENLDK	SEP215
NKYEDEINKR	SEP274
EDLSSKIKEQKIVVDELSNLKKNRKVYRQQQNSNIFFLADR	SEP215
HCSDGTQGTSQRGSLSR	SEP136
QSPSGEGDPPR	SEP301
AAAADGAGAEGAGGAEGQNR	SEP319
LGAEVRLGSLSAIVDPRSR	SEP297
KEGILNALETMGSSF	SEP41
GGQLHAAGGAGR	SEP298
EGAAVHGQQASGGPRR	SEP296
AGPGAGRLR	SEP224
MTNQEAIQDLWQWR	SEP275

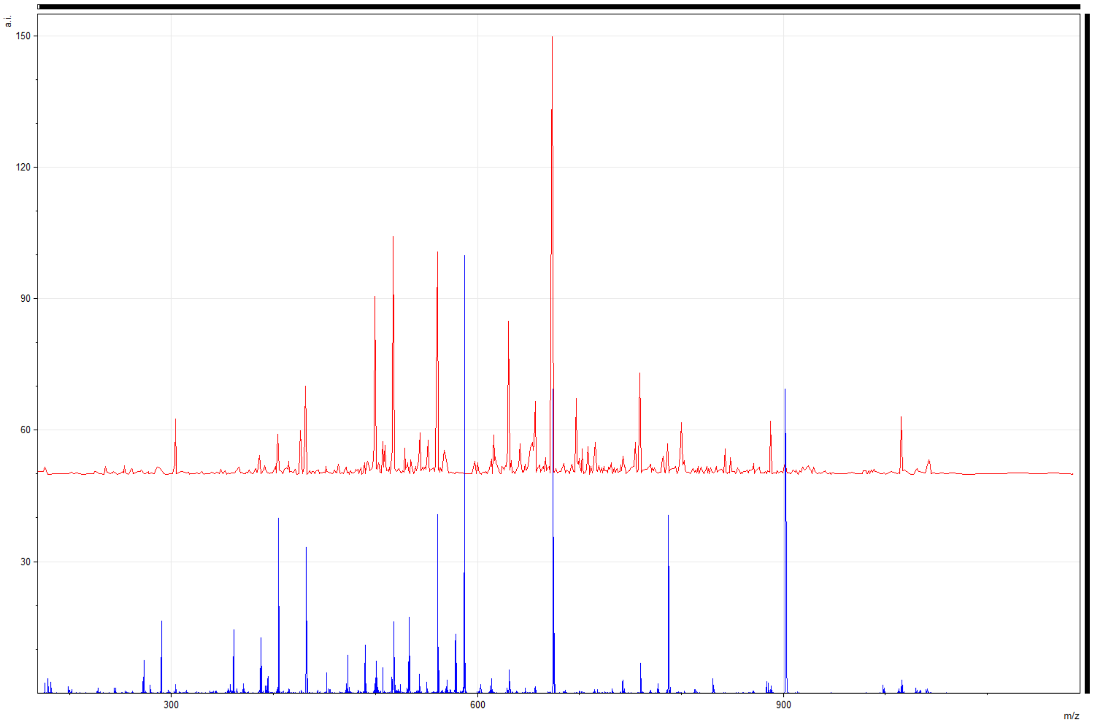
Spectra of synthetic and PATS detected microprotein peptides

Spectrum in blue is the synthetic peptide and the one in red is from experimental MS/MS.

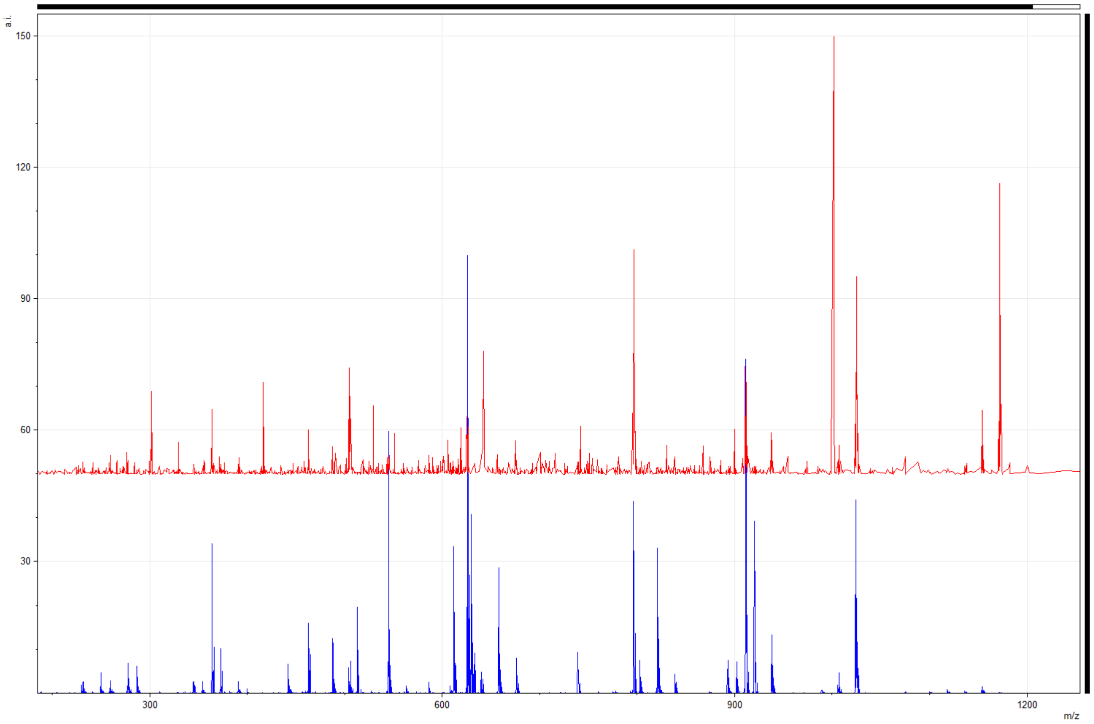
1. CQDILEAGKR



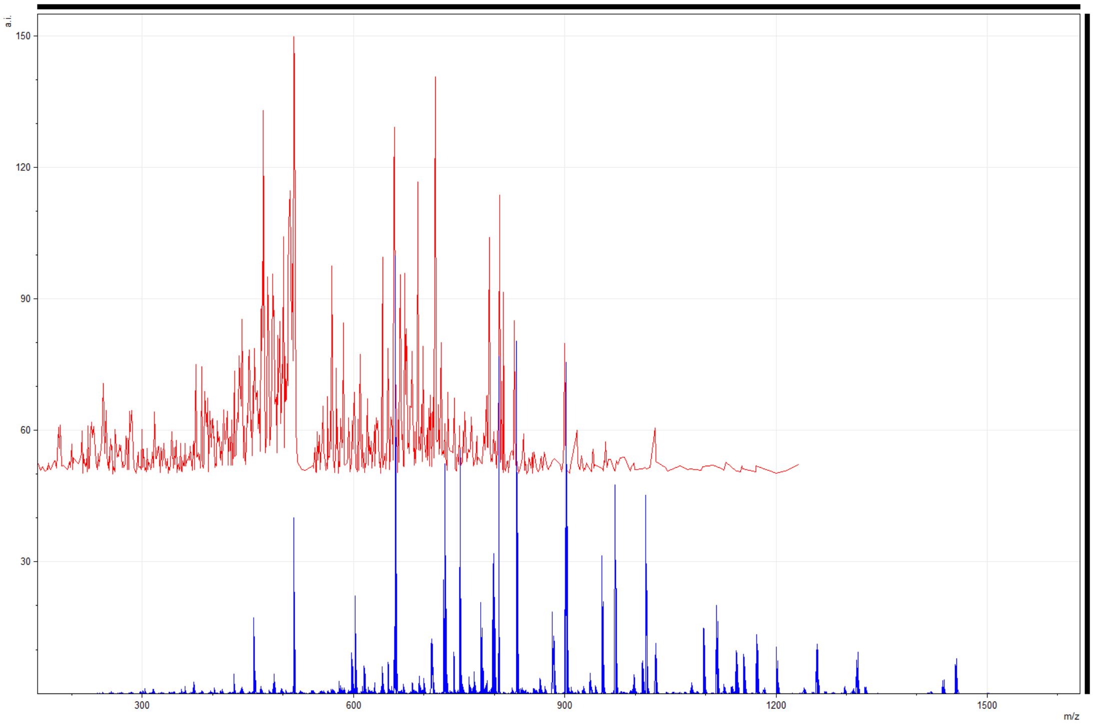
2. DGYELSPTAAANFTR



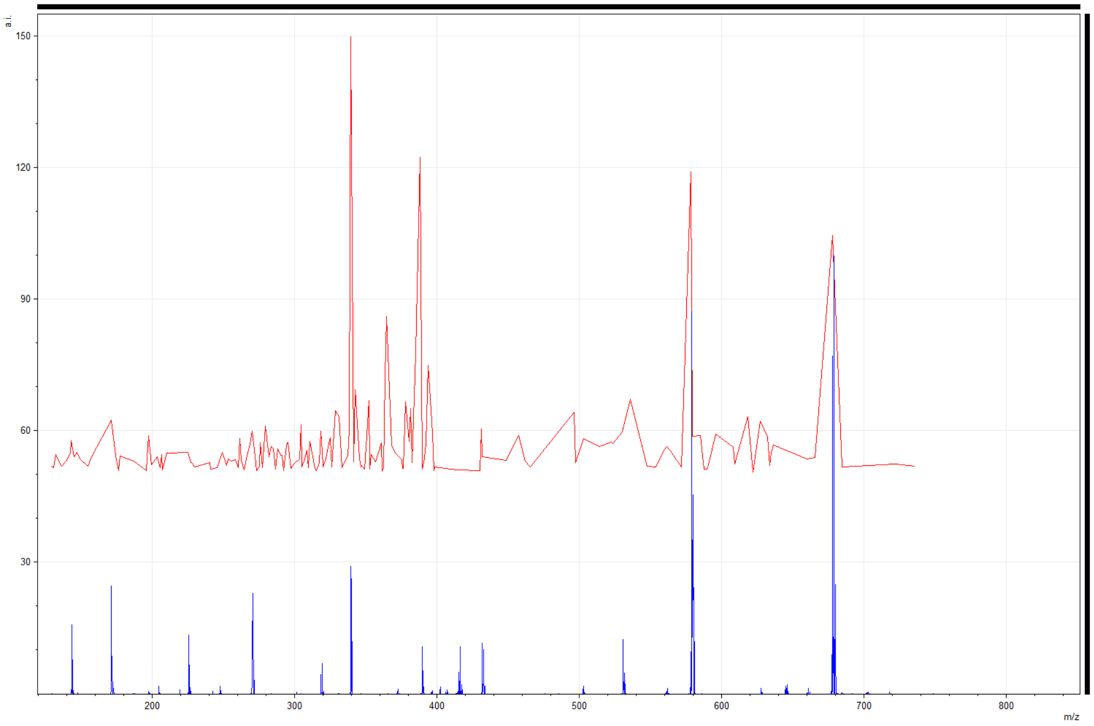
3. EFLDGIYVSEK



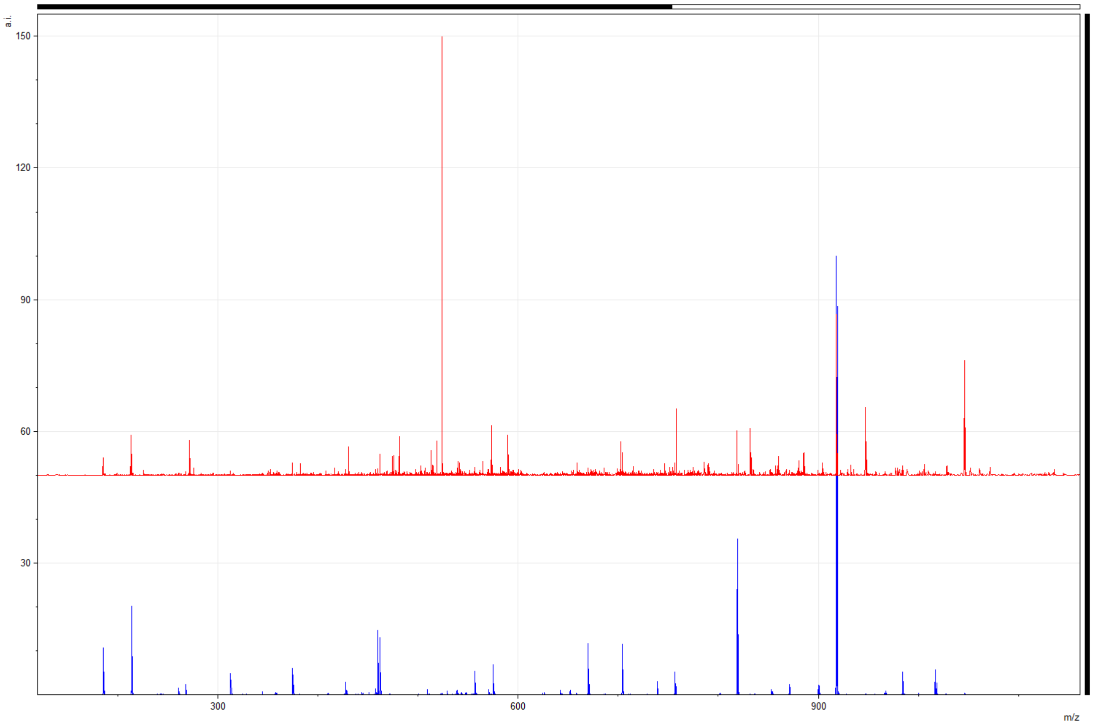
4. GAWGGGQLATAGSGPGQR



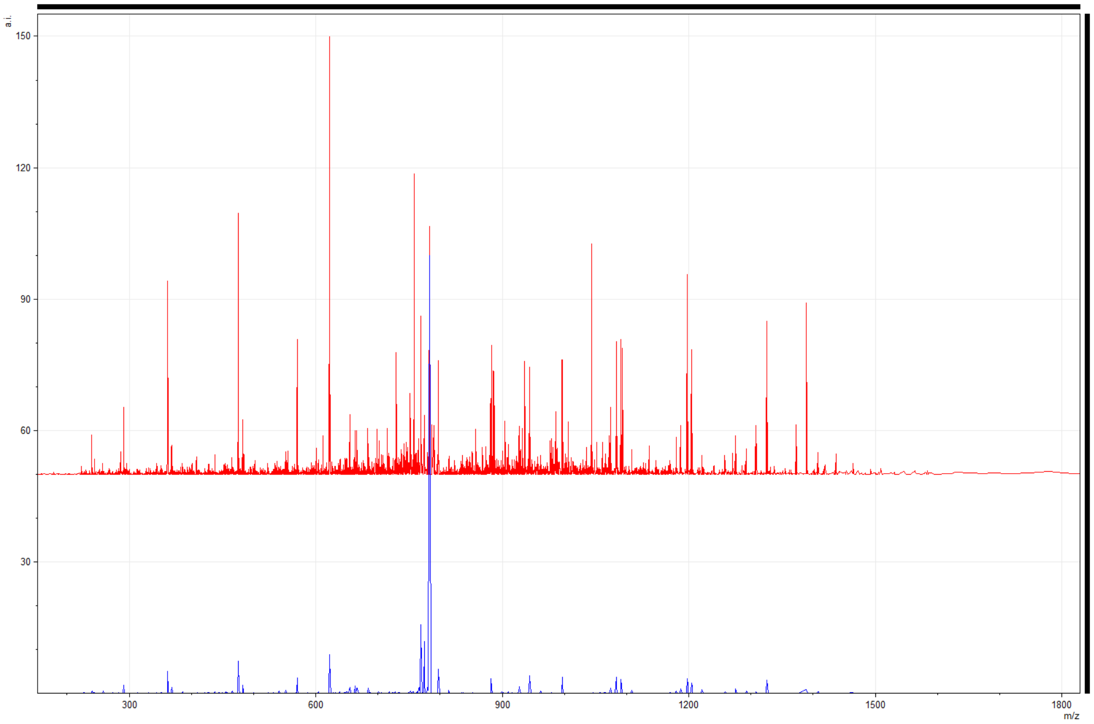
5. GLVFLNGK



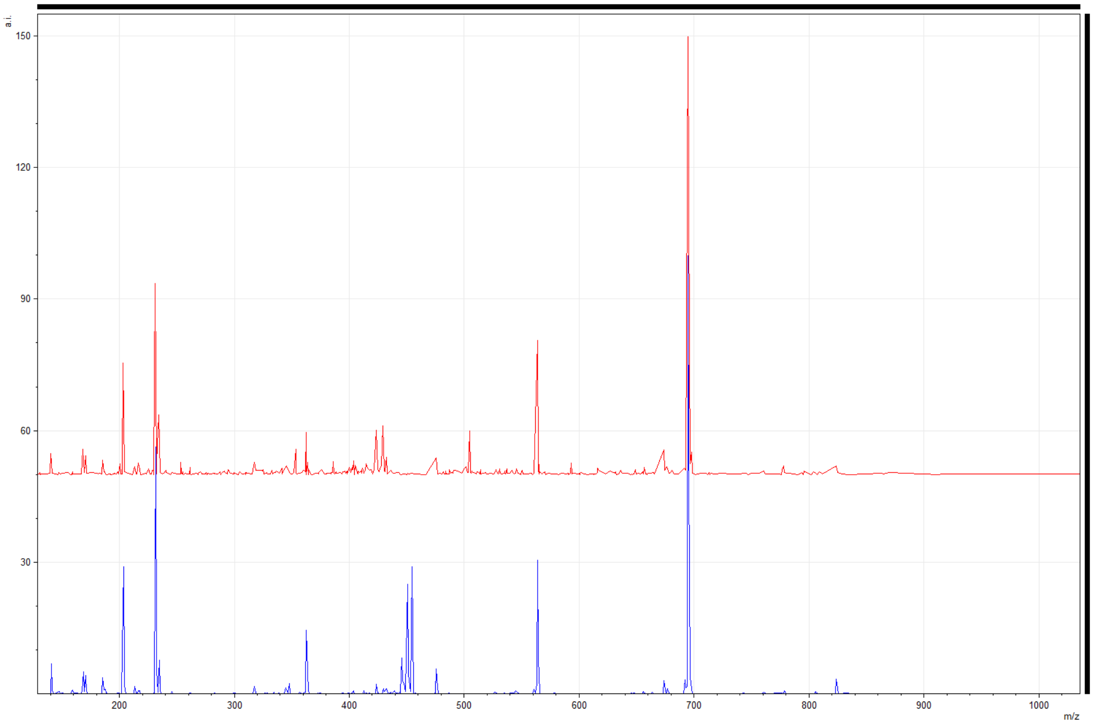
6. IVVDELSNLK



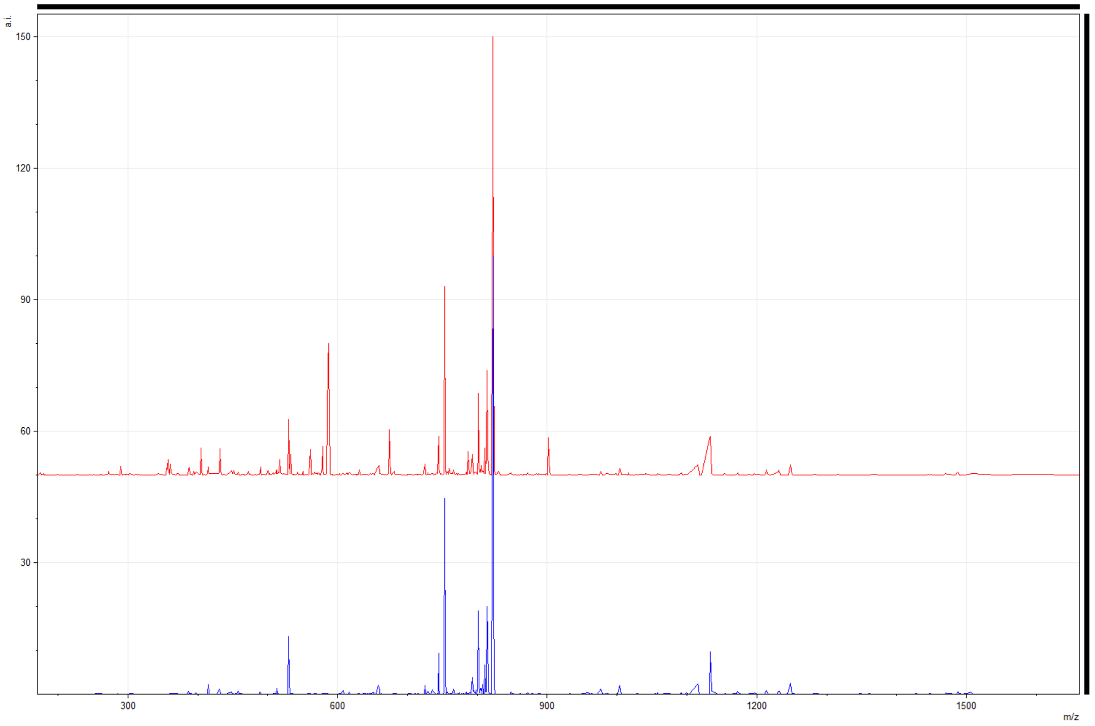
7. QQQNSNIFFLADR



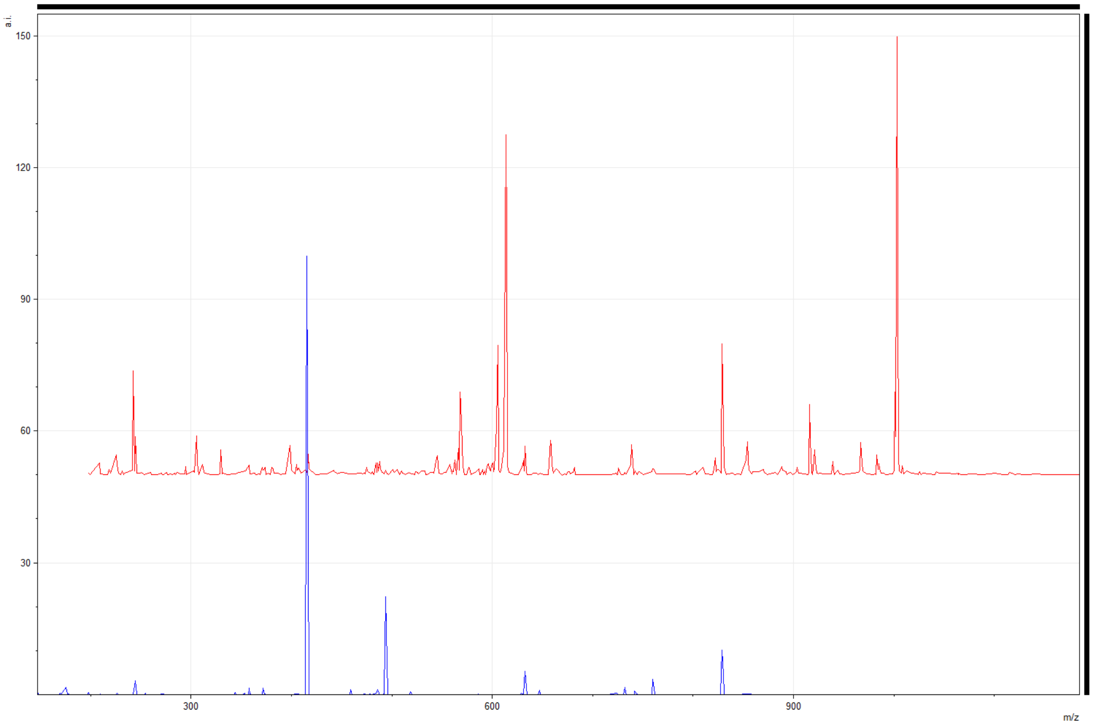
8. TEMLSESK



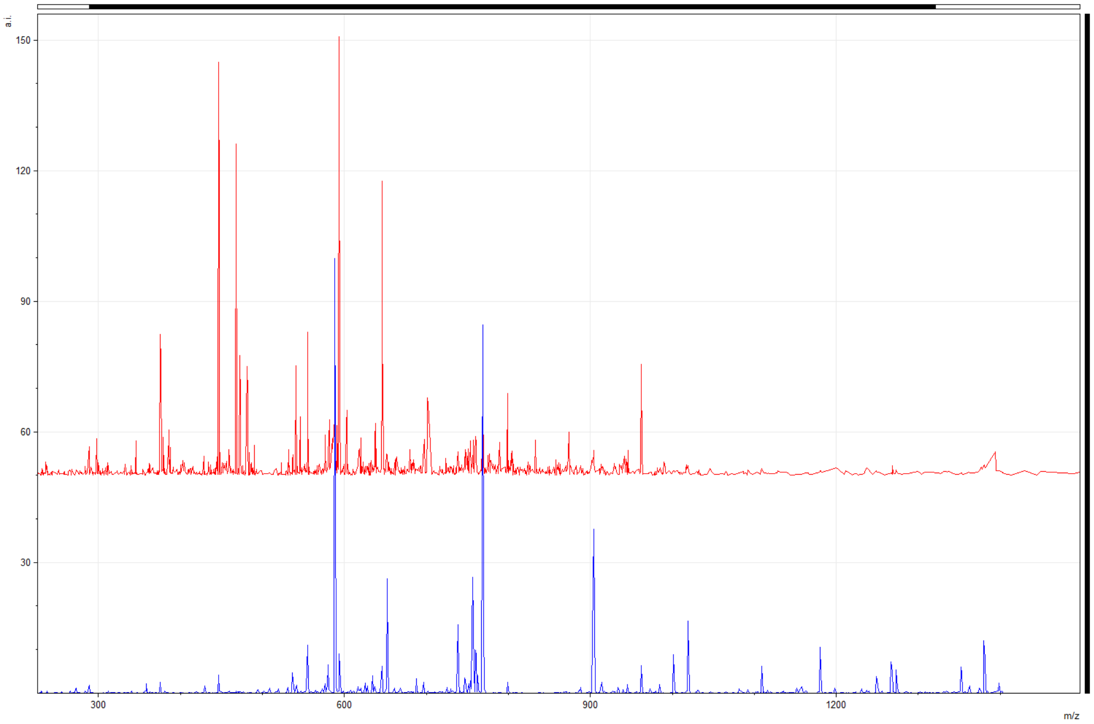
9. RGAEDEAAAWRSWR



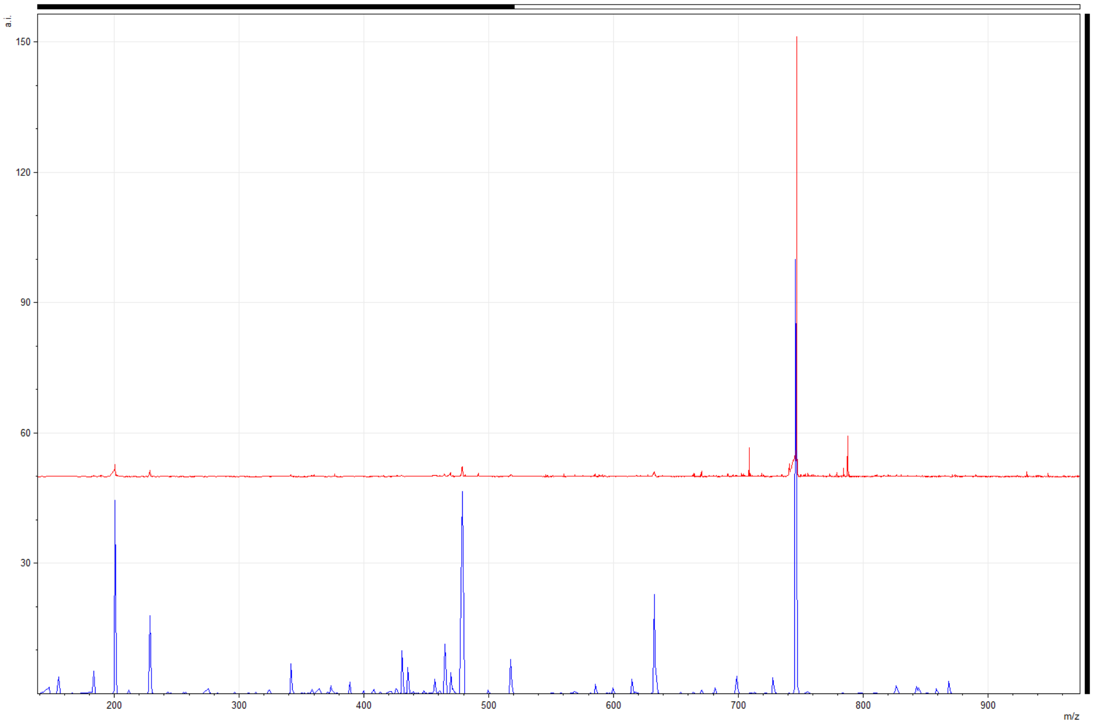
10. SSPVFQIPK



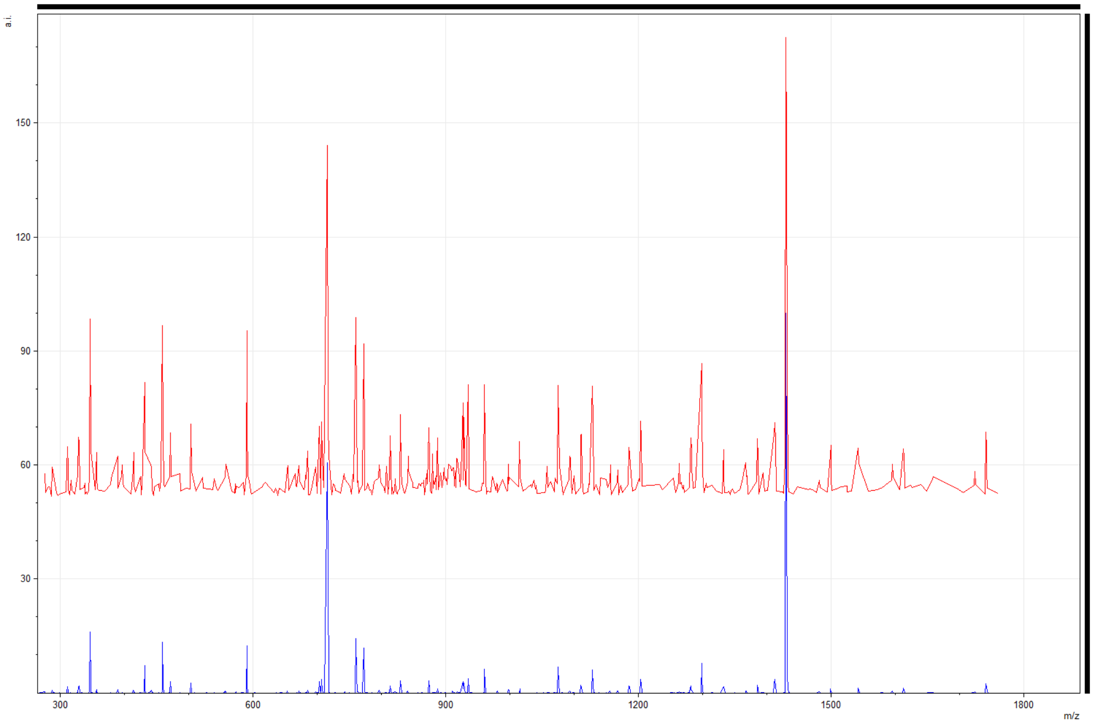
11. YTDRDFYFASIR



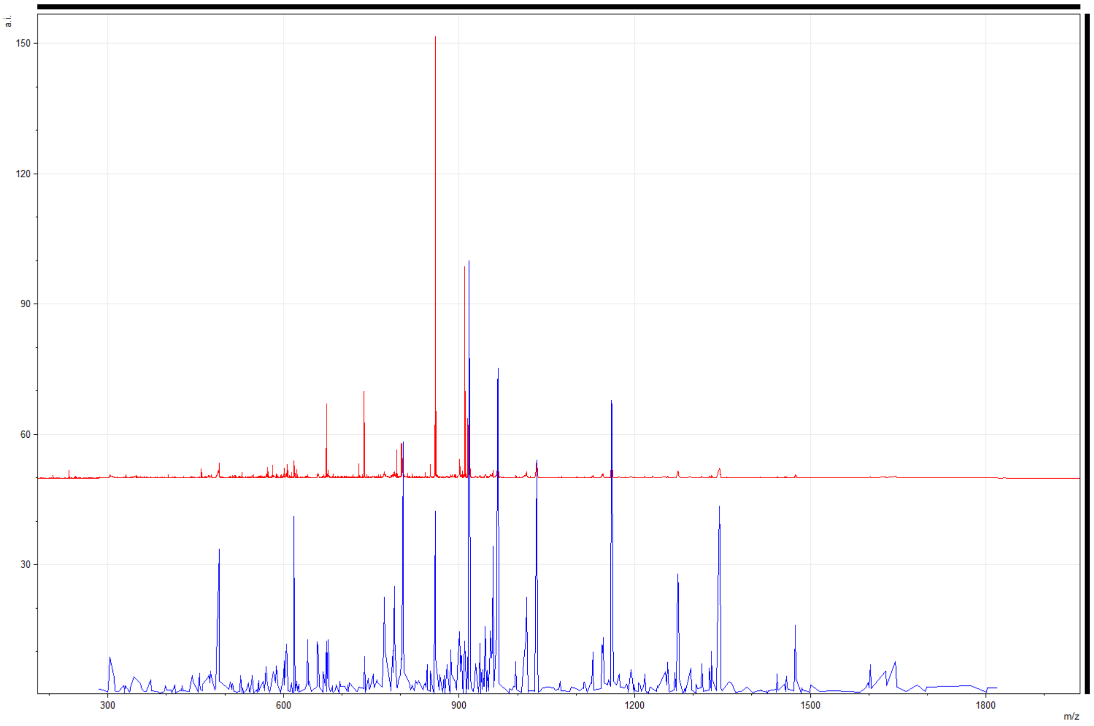
12. NILDELKK



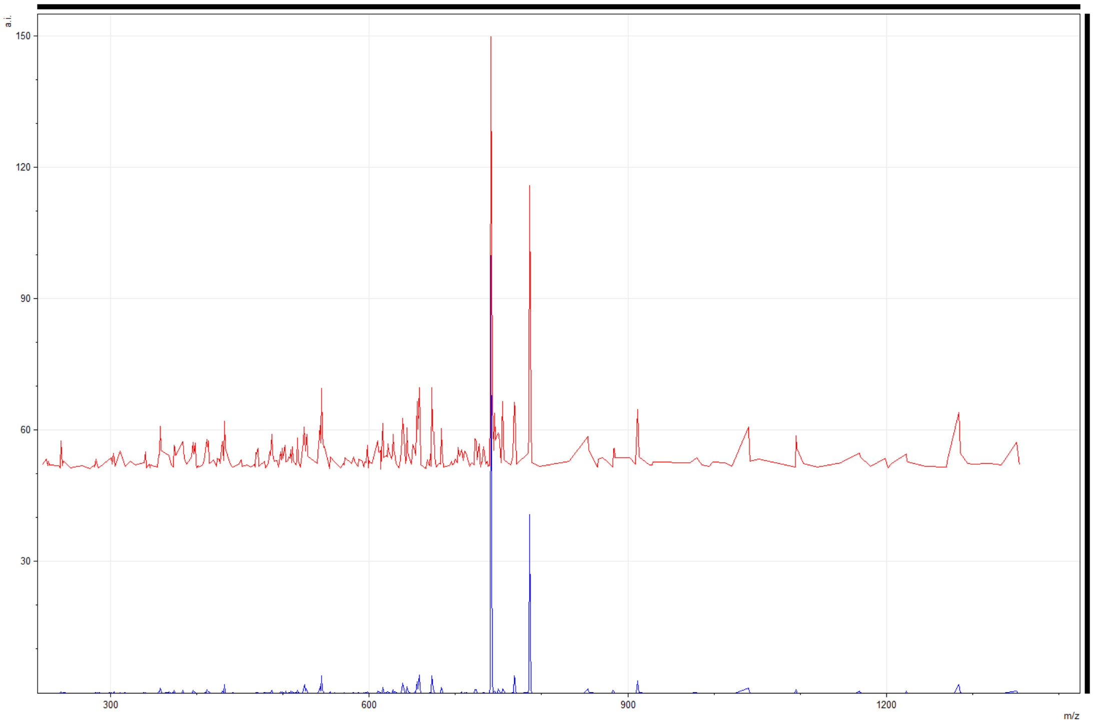
13. NDDIPEQDSLGLSNLQK



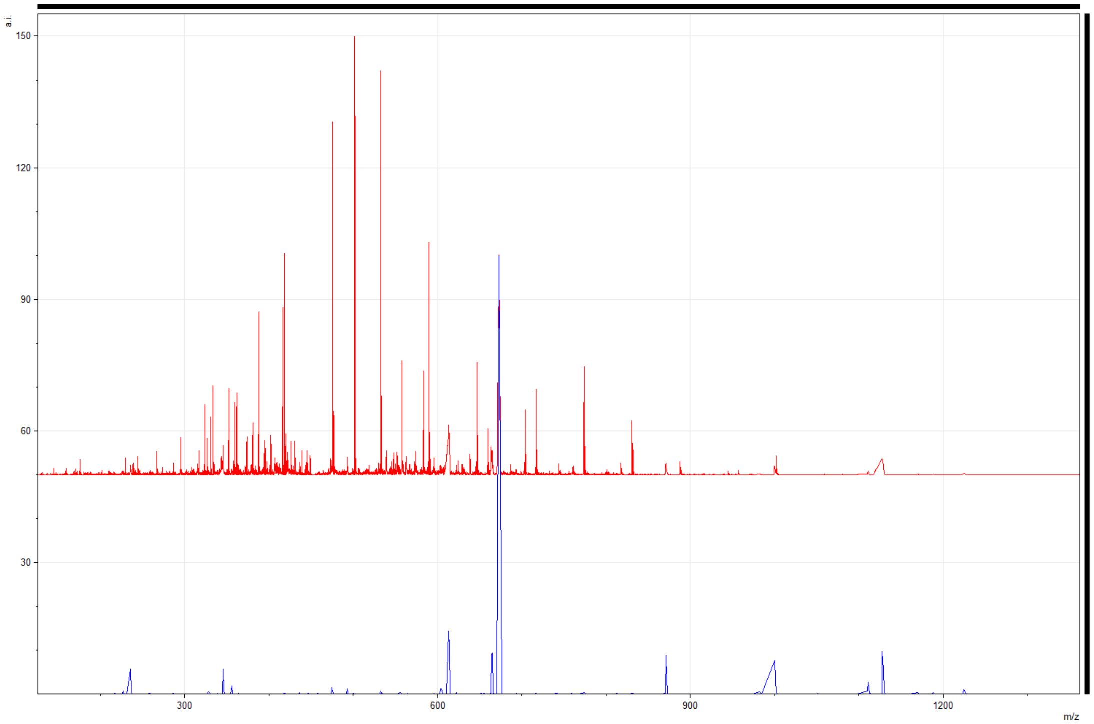
14. MTNQEAIQDLWQWRK



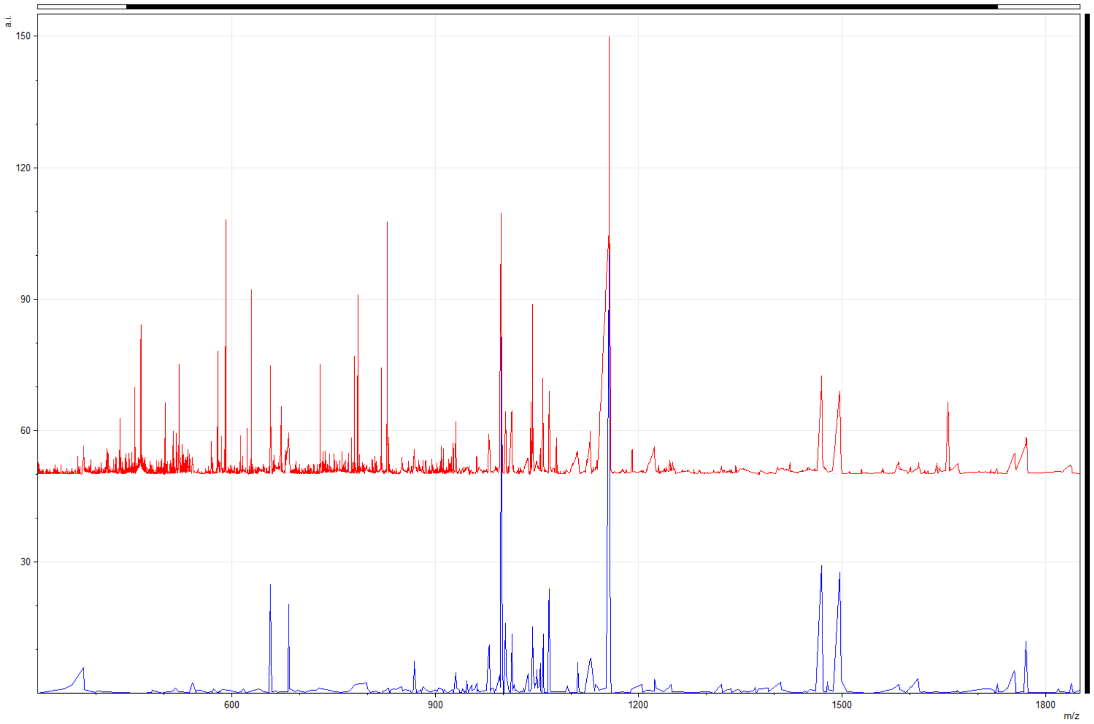
15. IQDEEGIPPDQQR



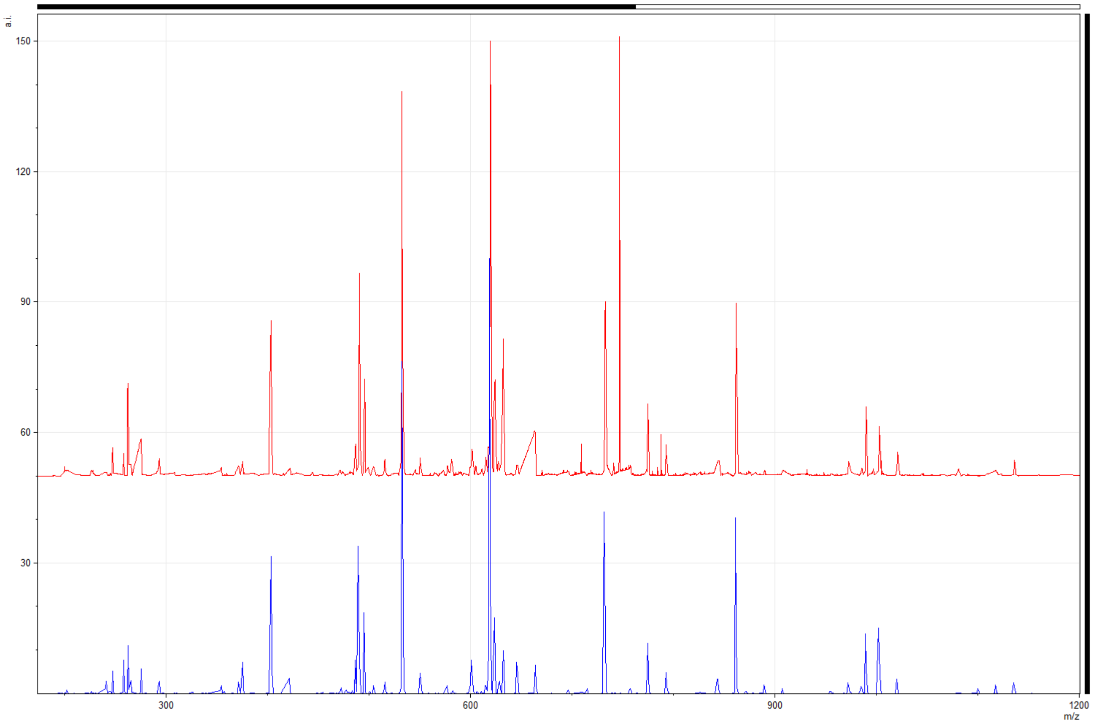
16. HPQEPGIAGGGGER



17. GTRPEDSSVLIPTDNSTPHK



18. EYQEIENLDK



Reference

1. Hein, M. Y.; Hubner, N. C.; Poser, I.; Cox, J.; Nagaraj, N.; Toyoda, Y.; Gak, I. A.; Weisswange, I.; Mansfeld, J.; Buchholz, F.; Hyman, A. A.; Mann, M., *Cell* **2015,** *163* (3), 712-23.