**Supporting Information S1.** The benchmark dataset used to train and test the model for predicting the possibility of carbonylation at Lys site. It contains 300 positive samples and 1,949 negative samples. None of the sequences included has pairwise sequence identity with any other in a same subset. See the main text for further explanation.

**(1)** List of the 300 peptide samples in the positive subset

SAPAKGR**K**KSKMGFQ

ENSLAED**K**DGRRKGK

VTTGIRD**K**KGVTVKT

QCRLKLL**K**LERIKDY

NIGYGSN**K**KTKHMLP

VTGGAAS**K**LSKIRVV

QTTWRKY**K**LKTDLKR

RKLLMLK**K**EKLEKVQ

QKKWKIM**K**KAALLIQ

GIGRLIL**K**EEMKARS

DKLTTAD**K**LLGELQE

KLQVLPQ**K**ASERLQF

GITNLGY**K**VLIQPSN

LAEKVFA**K**VLREEDS

SERSGTP**K**KRKAPPP

AAKEMEE**K**ISNLKEH

ADAGRDK**K**EKVFEKH

SSAINIL**K**EKKKREK

GPRLGDA**K**LKEKFKD

VSGEHKQ**K**GKVKRKL

QQEVVRM**K**LRLQHSI

DLQEQMN**K**NKMMPVL

GQQDTIK**K**ALNYSTA

SKVTYLG**K**ELLRYVS

DEKMKAM**K**RSRTWGQ

KRQLQTP**K**EKAQALE

KEPVGEG**K**GTKAFKQ

EADRTSS**K**KTKTQEI

QRVLDIL**K**KSSHAVE

HKKPIDL**K**AIGKLPI

VKQTVQS**K**ILTTGEN

KRLGRRF**K**KLDLDKS

IPVQLVF**K**NKIKLYW

SQEIKDT**K**ECVQNKE

TRFLEEI**K**NQDKLNK

CNHIREV**K**SLLEELS

DCSQDLL**K**KREHHIE

KTLFSCW**K**SENEKLL

SPPAACE**K**GKEQHSQ

AKEHKEP**K**QKDGAKK

YRIELLR**K**VREQVLK

RKFVEHV**K**SQGHKDK

KTLNDSL**K**KVENKVS

RQICVTQ**K**LLPAKRS

TEKEMIQ**K**LDKLELQ

KQIEKEL**K**QMELIKD

YDASVRN**K**QQELHLE

KHLKTLS**K**TVFSETW

RSIIGFV**K**LRSNKVK

NKVKRSQ**K**LVYMGKL

YTKKDTK**K**NAKKSSD

CNKLLAA**K**NINLRLF

SGYEEAL**K**IFQKIKD

PIKQVEE**K**PQRAQNI

EPTERPL**K**GIQSRLR

EPAPKKQ**K**LSASVKK

DKLRIST**K**KLEEYET

LQIIPGA**K**HGNIQVG

RKLVERR**K**QVKQLMK

FKLGNKV**K**SEVNKLY

IEEKDLE**K**LDLVIKY

ECREEIL**K**FLCIFLE

GLFAGPC**K**VINAKDV

MASLRRP**K**RIIIRGH

KVPADLL**K**RAFVRMS

GNGGVVF**K**VSHKPSG

IPEQILG**K**VSIAVIK

DSRSLAQ**K**IVATYRL

NIPPLTM**K**RIRERFI

ISGLGGE**K**DRWTEAA

RNIYQGV**K**KKQYDIL

LKLESKL**K**ADKLYLQ

EVQEVKD**K**AQKIVDE

KVLMPKL**K**AKPIRTA

LLNRLNR**K**MEIKPLQ

HFRSLRT**K**LLLMSRN

VIQEIVD**K**SGVVRVR

GRNQEKL**K**KFMIRIG

KKRIKKR**K**GEAMALN

TKEKAGP**K**GSKVSEE

ERIFTGN**K**FTKDTTK

KILKKIN**K**AIVSKKN

VANAVFV**K**NASEIEV

CIVILTG**K**DPLGETF

TEKLAGV**K**QEVIKES

EREAELK**K**LQEARER

KKYLEDV**K**LQARGQL

AECVKQA**K**GVRQQAV

SISQKKV**K**IELDKSA

PLAGKKA**K**KPAKAAA

AAKARVT**K**PKTAKPK

FQQATKI**K**KLRAGKL

SVRGPRI**K**HVCRRAA

RFQLPLD**K**GNGKKHK

MASQRQA**K**IQRYKQK

VFDKVSE**K**LGDKRLF

QGKENLW**K**ENLRKEE

SGKLYKT**K**SNKELHG

DRKTIPI**K**YPLKEIV

ASFQAER**K**FNAAAAR

GSLLGSM**K**LRKSESK

ESPHFYR**K**GTTPPRS

KKKYEKE**K**EKNKILR

IQYVVRL**K**KENVRLA

TANIQDL**K**EEYSRKK

ERLKRLQ**K**SADLYKD

DILQALQ**K**LSEDKNL

KHLQQKL**K**EKDRELE

GEDDERS**K**RIWLDYP

PDLRVVQ**K**YPLLKEP

TNDFTKI**K**GWRGKFH

TLAPVVA**K**LGNSGAS

AKEADQL**K**QDLQEAR

AKKPAAL**K**PKVPKKE

PGTTKTT**K**SSAVPPG

IDIYLLE**K**SRVIFQQ

INRALDA**K**LSRQFFI

NKLMTNL**K**STAPHFV

HKLEGNL**K**LNRESME

LEVKSDS**K**EDENLVI

KLSLEES**K**KKGYDLR

KETYEKQ**K**GHYLAGK

SQQMQSG**K**EYRKDYE

LLSVKQE**K**EIQMKMI

IISFAVQ**K**ETQFHTE

GEKYLQS**K**EDLRLML

LMLIELK**K**KQEAGFA

VTGREGA**K**DIDISSP

IPKMKMP**K**FSMPSLK

KLKGPKL**K**MPEMHFK

EMHFKTP**K**ISMPDVN

NLKGPKM**K**GDVDVSL

EKAKSPV**K**EEVKSPE

APKKEAP**K**PKVEEKK

KARLERF**K**LRRMKAN

LQSQEET**K**ERRHSHT

ADAKKKK**K**KSWVYEL

ISLKKAK**K**PPLPPSR

IEIKSKN**K**VRPGSLF

LAAMDAT**K**LEYERAS

KEEKKKK**K**IKTIKSE

GLGVMPP**K**AGQTITV

GLEAAQI**K**ELEELRQ

ELKAWQE**K**FFQKEQA

RKVEEVT**K**VCEGRRK

TLVPAGI**K**SLGLAVS

REVSQSR**K**PSASERL

RGGGSPE**K**PPSRRRP

KKFLPVL**K**EILDRDP

IHVIQQG**K**TGNTEKF

KIIKSSS**K**VHSFGKR

ERMKRHQ**K**ALVRERK

EMKKQTL**K**SLIIKLS

PPPIKSF**K**EMKFPAA

QKATTGL**K**PVDSGCV

IHKDLIK**K**PTISTAV

CRGIIGG**K**SQRVNGL

QLDRLLP**K**LARGSLS

SIVRIIG**K**MLPLEPC

KEKELEN**K**LEELKKQ

KDLQEQN**K**KNEERMF

EGKDEDA**K**KSLRTME

EMSAKRA**K**KDVLHSS

LLLRMLE**K**RQMDRAE

LESMIPI**K**MVNFPQK

SIEKTSA**K**DLAPTSK

VLAKPTP**K**AETTTKG

MPRVRKP**K**TTPTPRK

KEERVSL**K**VLAKNFG

KNPKEEK**K**PKEKKKK

SRTVRLL**K**ELRRALG

ARVTEVM**K**ALKCNVR

LLLAPSS**K**KGKARLS

DMLRLAN**K**DSIGFFI

GDRIQVR**K**VPPLKIP

TLADIKA**K**AQLVKAQ

KSIRAFA**K**GFLAEEK

QMYEEQI**K**NLEKENY

AVLLKTK**K**KGQKKSG

HGVCSVL**K**GSEFMFE

AMPGAEY**K**AKKAKGD

RLLDEAT**K**RSNRDSL

TEHPYKS**K**KAVWHKL

LLSVRMG**K**EEEKLMI

MVTSLFC**K**LGVLVRH

HFLPLME**K**LKKKAAT

EDGEKEE**K**AKEDKGK

VIPVLQT**K**TRTNVPT

PEPKKIK**K**AASPSPQ

TQNSYRA**K**EPILALR

DCENLLK**K**LLVLNPI

LLLAYKI**K**YPENFFL

ERKSPED**K**KSMILSV

MYLMLDN**K**RKEVVHK

WSQRGKG**K**VFPKLRK

RGKAAIL**K**AQVAARG

AYPRLVV**K**LMPNGLR

VPAAYVK**K**LDPAQSA

KKFDDFQ**K**DLKANES

MAASRRA**K**LNESHRL

VEHWKEL**K**QLAAARG

TELIRQE**K**LEQLAAR

LKQSGQK**K**SYTLRVR

KYDAIKF**K**INQLSEL

DELKSSV**K**TKDKKII

GRIRLPR**K**ATKTKKN

RRKKRAP**K**ADISKSL

ALMEVKM**K**EMKGSIR

SKKIPEE**K**VPVPVQK

EKPKAPP**K**GPEISEK

PIKGVPK**K**TPSPIEA

VVPRSEG**K**VHTLTLR

PKIKVDV**K**FKDTVIL

LKVTEIT**K**DSVSITW

LDGGSKI**K**NYIVEKR

ESSVLRA**K**EVTWYKD

VQEEISQ**K**ALRSEEI

IGAARTT**K**KRIPNTK

GRNVKSR**K**LKEIFNK

PRPPSLK**K**KQTTKKP

GAVKGLC**K**LFCLTLH

LSSLGGF**K**LAHGLLE

HGLLEEL**K**TVLSSHK

RLIGNES**K**GEHVPGF

KAADALG**K**LISIHIK

IGSINLK**K**NEPPLTC

FEALKYP**K**FSKAIVI

LTKQDKL**K**SPFKFSD

RKMEVGF**K**ARGQPKS

FAKNIPV**K**SKNIRVV

SKKPDKE**K**PIKEKDK

EKLKEIL**K**ERELKIY

KKLALSA**K**KASTLWR

VNEQEPC**K**FLLDAVF

VFKTRIL**K**IIDEGLK

LQLSKKL**K**TVLDQAR

KKKLTSK**K**PPGELLV

GLTVGFD**K**KDMMDIK

QQLNGVQ**K**QIIICGR

DDVALVS**K**ALQAEEM

TGDFESK**K**NELPDGL

AARRRFL**K**LQQDQQE

SKAKPSY**K**QKRQRNR

ETRESET**K**LKELPGV

ANRLFGD**K**SLTFNET

LKLEDTP**K**INSRFFG

FFGEGTK**K**MGLAFES

EKLIKDL**K**SKEVPEA

EKLTALT**K**KYRITEN

KFLDMLI**K**KLKSFDY

SYNETKI**K**FDKYKAE

IDLLKIK**K**ITAIITQ

VSEHEAT**K**CQSFRDH

YLAPNNL**K**PVVAEFY

YAVAVVK**K**DSGFQMN

MNQLRGK**K**SCHTGLG

LFSSPHG**K**DLLFKDS

LSHHERL**K**CDEWSVN

EGCAPGS**K**KDSSLCK

VPQNTGG**K**NPDPWAK

LCLDGTR**K**PVEEYAN

AVVTRKD**K**EACVHKI

YLGEEYV**K**AVGNLRK

TVKVPMM**K**RLGMFNI

RSVQLTE**K**RMDKVGK

SNTKVDK**K**VEPKSCD

LHTLFGD**K**LCTVATL

NECFLQH**K**DDNPNLP

LFFAKRY**K**AAFTECC

AEFAEVS**K**LVTDLTK

LLVRYTK**K**VPQVSTP

PVSDRVT**K**CCTESLV

CFAEEGK**K**LVAASQA

SEVAHRF**K**DLGEENF

KAACLLP**K**LDELRDE

SSAKQRL**K**CASLQKF

DSISSKL**K**ECCEKPL

VLLLRLA**K**TYETTLE

CCKHPEA**K**RMPCAED

SEKERQI**K**KQTALVE

KHKPKAT**K**EQLKAVM

DNEETFL**K**KYLYEIA

WLNGKTF**K**CKVNSGA

VATALAH**K**YHXXXXX

VHLTDAE**K**AAVNGLX

GMYELLL**K**VRPEQLV

EVERTRN**K**FLFLKAD

LTAFTNL**K**IKHPTYC

DICTLPD**K**EKQIKKQ

AADKTNI**K**NCWGKIG

KVADALA**K**AADHVED

KAGQYTD**K**GLRKCCE

MSAKEKG**K**FEDMAKA

DDSPDLP**K**LKPDPNT

KGACLLP**K**IETMREK

VGTRCCT**K**PESERMP

EKTPVSE**K**VTKCCTE

LVELLKH**K**PKATEEQ

XXXXXMV**K**VGVNGFG

TVDGPSG**K**LWRDGRG

**(2)** List of the 1,949 peptide samples in the negative subset

SIAVQMM**K**RIHSLLE

SPHEQEI**K**FFAKILL

FGEQLIQ**K**SEPLDAV

MASFSFL**K**DNSTDVC

HSRALLV**K**TTLNISF

IKVLSSS**K**VLSEEIS

ETWRLWQ**K**FLDDYSR

RINEYVG**K**AATRLSI

EKQKSEA**K**DRKVLEI

EYRLDWA**K**WKAKIQS

PGEHVFV**K**GYEKGQP

GILDRSS**K**SQSSASL

ARLEADE**K**KQLCVLQ

QNLQDAA**K**DMKKFEA

FVILRDE**K**WGGNKTY

RQHPDTL**K**YSTLMDS

PTTLIPA**K**APEIIDV

QIQALED**K**KEKEMSA

THFVARL**K**SWRGNEP

WYNLLSY**K**YLKKQSR

AQPAAPA**K**VPSPGQQ

SPQPESF**K**TSRSSKQ

AARVTGM**K**KWPRTPK

ECLVSAQ**K**VLEGSEL

VTSNEQV**K**GYGTHLM

NRGWFCE**K**VVILCPF

RILAAGG**K**SNHLHLW

NEMASTE**K**LTDVARY

GSKDREP**K**PKRKREP

QWQFLVQ**K**SAEKSQK

HAPQFPE**K**EFNITVQ

KMALEVY**K**LSLEIEQ

RNTRILR**K**CIEKVAK

KAVMTSI**K**QLSSEEL

IRMSARQ**K**QIMEIEE

HLSSPPT**K**FFVSTPS

LENSSGT**K**SAFVTVR

EELRDYV**K**ARLKVFY

IRVCALN**K**VGLGEAT

VINYIVE**K**QDTRKDT

KCSKTSF**K**VENLTEG

FSQPIIN**K**VKPQLLK

YRVEAAW**K**LSQWDLV

KARKLFY**K**AIVRGKE

NAEMHKN**K**LQYFMEQ

PRLPKLF**K**QEEQREL

ALEVDFE**K**MKKERDQ

YSAVNPE**K**DIHSGLI

SSVNSLR**K**AAHEALQ

RNTILWV**K**ENKVPCL

HTLVESL**K**LSITDQQ

ALDEFAT**K**LIQNNHY

EVLMVWY**K**QIEQVLI

NWCSQMD**K**GMLHFGS

EKAPATP**K**TEEKKDS

AIPLLAA**K**ANTKNTS

ESIHNSP**K**SCPTPEV

KEVYQRN**K**SNCTIEP

KREPKEP**K**EPRKAKE

VSFIENS**K**FFEQYEV

ALLADSE**K**PSHKSFA

KLVVTGL**K**EGAFYKF

FESHQNY**K**DVQDPSV

PLQQFCS**K**KLFSIPE

REPAGDG**K**SIRTFKE

RYLYTLE**K**VCQPLYN

NDVLEHV**K**HFVINLI

QALEDII**K**KFASVPE

KGPALSR**K**RKKEVDA

VFLTLYE**K**VFEDTYT

TKVPEVS**K**KIVPQKP

TEFQNHE**K**QESQDLR

QEWFLGA**K**AAAKESS

YGALAPF**K**PSEPGAN

TTILQHW**K**KCDSWWA

CRGLLLP**K**VVEDRGV

GDYVDRG**K**QSLETIC

NVLQYCR**K**SGLQTDY

PKPPSKV**K**SSSKESS

GRPLVAS**K**KYRISFK

MQLPYRA**K**KFSLYCT

DLSGADI**K**AICTEAG

SKADAPV**K**WFKDGKE

DGFVDQK**K**KLXXXXX

DVQFYQL**K**LPMVTVA

LVNPAGE**K**AVFVNVR

KEGLLQM**K**LPEPVKL

RVNAWQA**K**ANNNKQW

ITGQLGV**K**PQTGNSI

GCFWVII**K**GCSPFLD

AISDVET**K**ETTYSSG

SKPPGNL**K**ECSPWMS

LRWTRVN**K**DYVVYDT

PVAAPEP**K**KETESEA

LGTNGTV**K**YSISAGD

EETARRE**K**QQLLDVQ

HQSADRA**K**SEMATMK

EPPPSTV**K**TYHYLVD

ENYRPLA**K**TRQQNIS

LTMEINP**K**VPVNLLR

DGPLSPG**K**MEDISPV

EMDTDQL**K**LYEEPLS

LYRSVYE**K**NKMKIHI

TEFLALM**K**KVSKSPL

DNAPQFL**K**SKYFTPV

KPEELVS**K**ELSTWKE

EKKNEVH**K**VEMFLGE

RGPQVDV**K**GPFVEAE

EMLTPEE**K**ALLYEAI

ITLGPPS**K**PKGPIRF

IEKSKSL**K**QTDQPKA

RNYLPAL**K**VEYNTSA

KRGAASV**K**TSGSPRS

LCNQCRG**K**KAKNPKE

EVCRAGS**K**HSRPIPL

QKELVLS**K**PCKFEEK

SRTRDVV**K**SALGFIK

STDWSGV**K**KPIYLSK

TGASGSF**K**LNKKASS

KKAKKPA**K**AAAASKK

GSELELA**K**MTMLLLY

YYSALSG**K**SISDGHS

KGSLEEE**K**RRAADAL

GSLEQIM**K**DRWMNVG

GETTHTD**K**VPGGEDK

PLLPSLL**K**CLKMDTD

SLESIST**K**VIVTQTT

TSKMDLE**K**PNYIVPD

QAHPVMR**K**CLQSLCD

FHLVRDV**K**QGNLPPG

IMEAPLL**K**HKDDIED

TGPPQVG**K**TGSYLQF

EEDWEIN**K**DSAVEMA

RVLQALM**K**RFYLPGT

LSFINGY**K**NIYAEKV

PLQEAES**K**VSMALEE

VNRETDT**K**RPDARLA

EHSEIHT**K**LYFLQWL

ETADQFL**K**RSLEMRE

RGHEELR**K**LESTLDG

REHPFLV**K**GGEDLRQ

TLLENGN**K**QHQLGVW

ERSAEES**K**PRSLQEL

KYQALLS**K**MRAIDLQ

NFSPNQT**K**FTVQRTD

LVFCERG**K**LQPPRKA

AFSASAR**K**VVNRDSC

EKPPPVN**K**QENAGTL

LLETGQE**K**MAGDQKI

SLLIGVF**K**HGYERYN

DITLTND**K**PATAIGV

EVSEIHI**K**VKPTTKS

CFPEGLV**K**SCSETLL

TAFVQEP**K**VGETAPG

PFSSADV**K**PKVEDLD

DLLSLSG**K**TLCVTAG

SIEEPEG**K**LKGPKFK

INQVNTI**K**NEAEVIN

YQPLRRS**K**RRWVITT

TAAVQLL**K**PEGVLVY

NTSLLSQ**K**KKLEADV

ESTPLAN**K**PGKQSGH

SCQLSRE**K**ANVKWYR

DIAEQLL**K**ANPPGKD

DLTTILT**K**LKAKTDN

RVMGFPE**K**SDIFDVD

EDTATSS**K**RRPRTRA

YSIQDWA**K**RMKALVE

NSFISIP**K**MEVKSYT

AGAQALE**K**LEAAESL

MTTQLIC**K**LLRSREA

LRLLEPV**K**RAQEMDA

XXXMAKR**K**EENFSSP

IEIGLEG**K**GFEPTLE

RSVDSSA**K**REKPVVR

MESICIM**K**GMKPERK

EISESVG**K**NQFTSES

APVPRGR**K**GKKTKNQ

QSPAVLD**K**ADGQKPV

KLNMMLS**K**GELLSTL

YTTQSTI**K**PXXXXXX

HTQAGWR**K**EGNLGTH

AGTERWM**K**VVTLKPT

KEAYEHT**K**AYGYTLG

WYRLRLL**K**PQPNIIP

EEFVTSY**K**ALKSRIS

WNLRLDV**K**KNPVQDK

TSLAIAQ**K**LMELKLG

KVEDLPL**K**LTIYSEA

VTACNPY**K**PPGPPST

RGQVDYS**K**IMNGNLS

GVIYTVA**K**EELKKFE

TWSKDGQ**K**LPPGKDY

LANSAAR**K**KKLLEAQ

HPVSGVR**K**EQGGGCH

IFTDSEI**K**DEAFLEY

GEVQLTA**K**DFKTHAN

SPTSPFY**K**ACDTVFK

SHDNIRV**K**WFKNDQR

HMYKMPE**K**ILPKILG

KEKQEAN**K**QKVPNPS

ISFDDSS**K**TQSHSDA

GAGEEEA**K**GGKRPKE

GEEEVPA**K**KTKTIVS

VFLDSGR**K**TRSARRR

NMVLPDE**K**GAGALPF

SSEKLFV**K**YDLILTS

TNLTDDL**K**ALYKVAG

FNEGPCS**K**ILIQCKA

VVPGASI**K**YDAVKEE

MLQVTQA**K**KSQAIAS

KLLKELH**K**ESKTRDD

IEAHEQG**K**DIDLNKV

EVREAAA**K**TFEQLHS

PIPPPDA**K**ELELMFG

TVWRQAD**K**HNIPRIC

PRIQQGA**K**TSLQEEM

QSLLAPG**K**FSPAGVE

IDFRLFA**K**LNAFCVI

TSTSDIL**K**VPKPEPI

ELYSPVQ**K**ANPGTLA

GATCNNN**K**LSLSNAI

EELPEIS**K**TKEAATT

QDPACSD**K**APGMEGT

QTLAGTQ**K**FSIRPSP

GKGSTFA**K**ASFVASG

IIPHIST**K**TIDSWMS

ITSEERT**K**HDRQFDN

CIDDALR**K**NDFKPLK

NRFEDCQ**K**EEETKQQ

HESTSVA**K**DKSSTAS

AAHTQSF**K**QPSCTHI

IQNVHAS**K**RILFSIV

ETTTAAP**K**MTKETAT

QHTLNYW**K**EQSLNVS

YKADTVA**K**VQGVEFS

DFEEQFL**K**EKRFHDQ

IVALIAQ**K**GNFSKTS

LKIEAEN**K**YDAIKFK

QNEYNAV**K**EREFHNQ

IETLRLA**K**NYIWALS

GAWEQQI**K**QLEAELS

WAEMCSI**K**AVTAIEK

PVDNHRY**K**WNGRWWE

ILLNLLE**K**IPGKNAI

FAQVFLS**K**FTMVKNK

FLAGCQA**K**VEQAVET

RIEEALQ**K**AAEKGTH

LRDGQTY**K**FRVLAVN

TLSWFPP**K**DDGGSKI

DATRLTD**K**LLELCNK

ENQTEIN**K**PKAKRCL

NQTVTEF**K**QLISKAI

PEAKTPA**K**EEARSPA

SSSIFCL**K**MHKEMIF

YRCWRAH**K**EYLAILK

KKEEKEP**K**KEIKKLP

HTSVTLL**K**CTCTISM

QLWHHWC**K**KDKELYH

VSSPVIG**K**LNISETA

DYHKTKA**K**INIPADM

GHTFLLE**K**PPVPPKP

QVTMPGI**K**VGGSGVN

GVSVADQ**K**GKSTVAS

FLAQADC**K**LLECRNV

ALHPNAF**K**RLGASLA

SSCIDMG**K**ELLARSH

NASKEER**K**RWQATLD

DSGTYTC**K**VSNVAGG

TQILEEL**K**KTKMDNL

TVEARLI**K**VEKPLYG

TSTTQHN**K**VSTSPKI

MSLDFYT**K**VLKSCRS

PSPVGAL**K**GSDVILQ

DAMTHLI**K**ISRIIRT

GENMTSG**K**LTVAGGA

ENRFGVS**K**PLESAPI

GTRPGDV**K**EEAPQEM

ARPAFNL**K**KPSKYCN

HIFFDAA**K**NLVWKER

VRYENNL**K**PVLKHVK

KYEGAKV**K**VLEERQR

FISDGVR**K**SLKVVPE

GIPPPTL**K**WEKDGQP

QELEQEN**K**LFKDDME

QDNLGLQ**K**QLDLQRE

SEAGVEV**K**KEVGVSI

AAAEENS**K**MEQSNLE

LAMAVIR**K**KHGMXXX

ELLETLQ**K**FKAVDKE

WYQETHE**K**QQDLNIM

RSVLESL**K**RYRFGKD

LSSHHSS**K**RDWSKSD

VQVITHV**K**EKLHFMD

ECPDAKL**K**GPKFKMP

DVETQSG**K**TVIRLPS

IDYNPFA**K**GFRDDGL

LNELTQL**K**QLVDAQK

QLSDLNY**K**VEGEKLK

WQEKFFQ**K**EQALSTL

VVSITCL**K**HKSGGHA

SASLAHM**K**AKFRETL

EEKQTSW**K**EIDNDFT

TDEDTDF**K**EFLKKLA

SCTLLSE**K**DSESSSP

EKASQLE**K**TGNDASK

FSFPASP**K**VFGGRLY

CTKPITC**K**DELAPPT

KVFERAS**K**DTFQLEA

MSPDQAD**K**LPQLQGE

EVLDGVE**K**MKSMSQL

LLEFHYY**K**CLVLGLV

DLSAAPA**K**QFNLEII

GFVLRGA**K**AETPIEE

ESFFSNC**K**SLPEAPL

QSLDRET**K**ERFVLMI

LRYRQAA**K**PPDLNPE

HLNEVSL**K**LPLSDVA

LRIVVPL**K**DTRVKEQ

SAATQAL**K**RNGAQIA

DSASIMV**K**AINIAGE

NTFSFAE**K**NFEVNYQ

ASLENCM**K**LSQMAVQ

IQLPVVS**K**QHCKIEI

RQSWSVC**K**QVFPGLN

MDWGAQQ**K**KANRSSE

SGILDRE**K**EERVSLK

LSLQSEH**K**ILHDQHC

PYIAHSQ**K**MQDLFSP

LTSEETA**K**MMVKIEA

RPEEEEP**K**VEPKKLE

DMMATLA**K**SQVTTVK

EGKEEWE**K**GKDKEVR

AAVSEDG**K**SDDELLS

QKELAEQ**K**SVETAKR

AYEDLSQ**K**YKAAQEK

NEEIDIS**K**AAQTTIE

KGDKGRY**K**IVLQNKH

PFLVMII**K**NLKKYFT

SHVILGD**K**VTKNSSG

TQEWDNS**K**SILGVQC

TPHLRIL**K**VGKGDSG

HLLQYFL**K**FVPAGYE

TSNGLVT**K**ALEHAFQ

RADQRKA**K**LGDSHDL

RGGSGFL**K**SGGEMLK

PDKEKPI**K**EKDKGQW

LLFGQRA**K**TIKNTVC

GEELVSL**K**EKSKSPK

EDDCLAF**K**VHQYFNV

FHLEFGE**K**SNAKIKD

YFTTQSW**K**TAQQHLR

EILQDLQ**K**RLESSEA

AETEIVC**K**VVESSSI

LDLKINL**K**ASYIIVP

VQAASSS**K**ERGGVSL

RAEVHLR**K**SAFDMFN

FLCIFLE**K**MGQKIAP

PKKTRNL**K**KITREQR

IQIVYLH**K**FLMSLLN

GLDTPCF**K**TSVNDSQ

KREVELE**K**NTKEEED

SDVVWET**K**PKKKARW

DLSSQLL**K**VLGTRKL

GQSQDNE**K**ELAALFQ

LILKEEM**K**ARSSSYA

VANLEEG**K**SYFFRVF

VFFQSCA**K**AVMWQKM

LSSDDYT**K**KKKKGKK

TARFLYG**K**KVEGTAF

DGAKKAR**K**PREASGT

FTVQLSN**K**LIMDIRR

EKEQLRS**K**LEEMYEE

QDLCSIG**K**EHVFSLE

VEEGLTY**K**FHAAWSS

LSSHDSI**K**MEIVDHA

GFIDDAV**K**KLNELSF

SSQDVES**K**RSDKTDF

QDLEDLI**K**AKEKEVE

DPMAGLL**K**FADDLGM

PPGQLQV**K**AQPQARM

EYDVTMP**K**VESEIKV

FTEPAIA**K**NPYDPPG

GHRKRAS**K**SPRKTAS

ESTIGHL**K**DVVGRIA

QAEFADL**K**KLQDLTL

LPYQNMD**K**TKTDYTR

QKEIYQV**K**QQRLELA

KNDFKPL**K**TLLQIDI

EFDVNLS**K**ANVDISA

PYMVKML**K**XXXXXXX

RLYRKAN**K**SSKLVSA

STGTLVS**K**REVELEK

TRVVHAA**K**AALAAFN

ADEMDRM**K**KEYTDCV

YYWGMES**K**IPVEDNK

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FHKSVEI**K**PSDKHRL

ETQIIPG**K**GQEKPLQ

RENFDKE**K**GKTPKYN

TQQCVQC**K**ESVGSGL

KVASLLG**K**KGASATK

IFENLAN**K**ADRDQYE

LQDQLLQ**K**EQENAKL

CSALLSV**K**EPATITE

EGEEEGD**K**NGDGGCG

GRSEERD**K**EELEDLK

EEGLRSQ**K**SDERQGV

VKKLEAS**K**IVKAGDS

ERYLENY**K**CYRKMEE

EEKAKED**K**GKQKLRQ

XXXMDDD**K**PFQPKNI

SLPGSIT**K**AGDFLEA

ENLAGPG**K**PSKSTEP

SSHRSNF**K**DPLQVAN

HLCRIIE**K**KHVSLNK

GDRVNYI**K**RSLQSLD

DEVPPTI**K**LRLSVRG

AALDNLR**K**VVPCYSK

LSGVPLY**K**GDVPTQD

IIPTFQD**K**SLSFPQH

IGLHLVE**K**EIDIEKQ

GTDYQLS**K**EYTLDVY

KRRPQTP**K**EEAQALE

NDSQEIF**K**LAKDVLI

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VVMAFSM**K**TMQNAKN

VTKNVRH**K**LTSRNER

AIITQGC**K**SLSSEMY

AFAICDQ**K**SVHGTFS

VSTSQAG**K**LPTRITV

LKAMIMC**K**GCGAFCH

ILSLNQR**K**EDLLVDL

VVYVAPA**K**SLVGQVA

VSISSAV**K**SAPEENS

LPYFIRN**K**LCKVIVD

DELALFD**K**SINEFWN

YKDGKRL**K**NYNMPWG

LDDISQI**K**AQVKELS

IFDDWAR**K**VQQRNLG

KAARGEE**K**DKETKNA

AESDTDV**K**LSIFCEQ

DRTRVPN**K**FRYPFYY

GKYTCQI**K**NDAGMQE

PVSASTP**K**IGAISSL

ERPDVDE**K**RSDLLKL

QIPKRNG**K**ENGTENL

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FVCSFLQ**K**NRKHPSS

VKSMKEP**K**TEAXXXX

MELLEAE**K**ERNNKLS

LEADIRG**K**PIPDVVW

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PTMSIDL**K**YLGVQLP

DFIQHIM**K**SSPLMFV

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GYSISHV**K**RVLDAEP

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LVGIYGR**K**GLPPSHT

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PDRDERL**K**KEKQERE

LTQLSLL**K**DTLSAYI

TETTEPV**K**ASEAPSP

VFETLIP**K**PMMQHYI

SDEAEDM**K**EAMNRMI

ISNVSAE**K**ATLTWTP

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TRWVPVN**K**SAIPERR

EKYLTIL**K**AVKVLQA

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GLWLPLT**K**NVVGIDL

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ESDSVVA**K**NAFVTPG

EASDVET**K**LREFEDL

LEVVDVT**K**STVTLAW

STDIVPA**K**KWDNAAI

QKTTLVV**K**DCIRTDG

DASVPSM**K**VHAPGLN

KMVVAEL**K**SELAQTK

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KVQINVV**K**LIAALKN

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AELCGVL**K**AVLQRKT

QEQLNEL**K**TEIEALK

ASDVSTA**K**SPFSAVG

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MSDQECV**K**RNREEEI

ELEELRD**K**NESLTMR

ELQLLND**K**VETEQAE

HPGYALP**K**AQTTVTC

NLGSGTY**K**LTTMKKV

VKSPEAV**K**SPKRVKS

KLKMEIK**K**SRRHPLG

KAKLAVE**K**GRKARKL

LHQSRLT**K**LQSVQAL

FVVPDAP**K**APEVTTV

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SSSFPLP**K**QYLDVSS

CLLAILL**K**TTNRASD

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LEASKVA**K**QGESIQL

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AVESIRE**K**LKAKPLL

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FDAAMNE**K**MDLLNDA

YPNFEET**K**SLPWILL

LTAQASL**K**TKPIHTI

CVDCYRM**K**RKNCQQG

PIFVQWL**K**EKEEVIR

IITEAFP**K**PKDIPQA

IINITMT**K**KLDVEEP

KKFEALI**K**KDLQAKE

CSIQQQR**K**IAQYLKG

EWEESEV**K**LKKSKIK

WTLAAPF**K**EQHHHRG

AAASGGA**K**ELKNIHV

RMASLCL**K**PPKTRRV

RCNKLLQ**K**VQKNKEL

DKMSFVE**K**VNKMTAK

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LTEKRMD**K**VGKYPKE

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LVSDVDY**K**NYLHQWT

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LSSTAQL**K**VLEADPY

KSQAIAT**K**KIISDYH

TMEQALN**K**SNKLNMD

EIISDVL**K**IPVQLVF

NHLETCL**K**TQQIKSH

LIQELQH**K**LNQKKEE

QKNKPIS**K**KEMIQRS

EPFSAMS**K**STVSTSH

SDMMENS**K**EEGTSSS

VAHPLNE**K**MWSAVFG

NMVEELE**K**ALGMKLP

LKQMELI**K**DQYQKKN

DSDSEES**K**KPRYRHR

YTCDCSQ**K**EGVYRVA

PISVVWL**K**DRGEVIR

GLVYRGV**K**VMPFSTA

SSYFHRE**K**SNIFSPQ

IEQFSTV**K**GVELEPT

QELIALA**K**NRFSLKD

ELDLWHS**K**LNELDSE

REQRRHM**K**RWEYFIA

DTRTHFL**K**TKAAVIS

PNSELCC**K**PLCLMLA

KPEKSLA**K**VEKELTP

PKIMSPE**K**SHRVISP

GKRHYEE**K**QKEHLDT

VFCAETE**K**ELSKQWK

YELTEEE**K**FYRNALT

RRQLLLQ**K**LLQRRRK

DLLLETR**K**PDQVFQS

ALHRLIA**K**SRELYEK

WRSSETE**K**HGQADSE

ELIAKMG**K**SXXXXXX

EKEVRAQ**K**LADDLST

SPTEGKR**K**IIIXXXX

EYNTVVQ**K**PRQILCQ

CQITGTP**K**IRVSWYL

MRYSAEW**K**STVSRLG

PVAEVAP**K**AQEGEST

ATLMTQC**K**EGAQKEG

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PYHSHCM**K**VTAQNSD

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RSEVSQV**K**REKENIQ

KPLAASP**K**PAGLKES

RQRNRKN**K**MSLALKN

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AVDPTLL**K**TFEALKF

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RPEGLRE**K**NSVIRSL

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FADIPTG**K**TSPYILR

SRSFREE**K**DRSNKAE

LQINELQ**K**EIEILRQ

YSPSPPP**K**RRTASPP

KVVSVTR**K**PEEDGAR

CLSAFLD**K**YELQIPS

LLSIKWN**K**LEDVAQL

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DCIEAEE**K**VHVIEKK

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SWMPTLE**K**ICEEVIV

PEHLRTT**K**VNKQISD

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MLEQTLQ**K**VTELENR

SLEMPLR**K**QEELEST

KAEHVKQ**K**GHYVGVP

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PISITWL**K**DDQILDE

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YRQNQEL**K**VRVELLH

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NDVQSEL**K**YKAEHVK

VTHEQIR**K**ETEKTFV

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KTSEDII**K**SKNLRSI

TENAIML**K**RFNRYPL

PIRFDEI**K**ADSVILS

QENEENS**K**NISTMES

LPSEDLL**K**ELQKQLE

TILDDPG**K**KVKKPAP

GESTTDW**K**QIRSIIM

TTVGLLS**K**DSGKKLG

QLQTTFT**K**ALQDSNR

DDTYLQL**K**KDLEYLD

QEKPSRL**K**QRFLLRR

NYFHEIL**K**TIEEEVK

PTDFEWL**K**QSRFYFK

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SEFVRFS**K**TENKITL

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VLYDYVN**K**YHWEHTG

VIRTTHF**K**VTTISAG

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PHDIPES**K**DCVLTIS

KLAAQMQ**K**LNQKRAE

VNCKVLD**K**PGPPAGP

EESLIYR**K**KYILSKD

KAHVTDP**K**ADPRALL

VAHIIDP**K**AISKDHL

KHLASHI**K**YREEYEK

EFQREEL**K**AKQVSLT

FPNGVER**K**DAGFYVV

QQISFTE**K**GSDEKKP

RVAAVNV**K**GMSEYSE

EKQAELD**K**VQAKFDA

KEYTIVV**K**VLDTPGP

RKLALTV**K**GKELSEE

VTEVTSE**K**CVLSWFP

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DLGPERR**K**STTELTI

GVEIISI**K**PSAGHLS

PTMRDDP**K**LVWFEHA

PYWLDEP**K**NLILAPG

LENAASL**K**LFAGSLA

ISWLREP**K**SKPQLID

REQQLVE**K**SGELLAL

DPVQEPN**K**SMFEKTK

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FEGNTNT**K**GHVKNFF

QGVLDTG**K**KLSDDNT

LFSKPAS**K**EDLKQTS

WFPASHV**K**LLGPSSE

MHISSQI**K**KTTDLTT

HIMDQHW**K**FCVECEE

EEVPPPP**K**VPALPKK

RQLENSE**K**YEITYED

HEENISS**K**MKGLNGK

EEVQLTS**K**QKEMLQA

GKVLVRE**K**RVDLIQD

SPGRCTP**K**SSEPAPA

FEEPPFE**K**EANIIVD

KEVWNRE**K**LTLQKSL

GLALIQN**K**KEDVSSI

GILEHQY**K**ESTTYIS

AQSQQLQ**K**HFSSLEA

LQVANFL**K**DSYTALT

SLPPLPF**K**RGGGKDG

KAENDRL**K**VAPGPSS

SRATPPT**K**AVDPIDA

HDAHLNG**K**VIGTLKN

DKTSDGP**K**LFLTEED

RGTSLVV**K**GLKENVE

VNWYFEN**K**LVPSDEK

EGELESL**K**ENLPFTM

ETISTAN**K**ANAERLK

ISLPNIR**K**PDGYDYY

DSAHGFL**K**VPPRMDA

QAWSSLG**K**RADQRKA

NPDDGAR**K**PIPRDKV

LEELSGA**K**ISDLHRE

EEHMEQQ**K**ENMEHLK

SLLCNFT**K**SMEEDPQ

LTENQFL**K**QLQLRHL

IDYYIVE**K**RETSHLA

HKRRPKV**K**RSKKRRK

LSPAVRQ**K**ETVKNDL

GHQNLHQ**K**IQYVVRL

SAVSQER**K**LQNSMLK

KRLEQQR**K**DYAAPIP

NDWFSNI**K**VNLKECF

TAFYDSL**K**LVRAEQI

RQPPDRF**K**FTSVTDS

KMRVLQE**K**KQKMDKL

LEAIGAP**K**PAYPYLE

QENLNSM**K**KRNVNFS

HPVEGHQ**K**LDSSPDP

IENQLAI**K**SKALDEL

HYLQENL**K**SMEEIQG

RAPEHSN**K**SKDRDNE

VVLRQMS**K**HKTELKN

MDAQTIA**K**LEKAFSE

YSHGENH**K**LVSEHVQ

EDDVTDP**K**RPLSFGV

SNMPQSL**K**VGSFIIE

TKGGWQQ**K**SKGPKKT

YTITLEN**K**LGSATAS

VKKENRG**K**GGAVSKL

YRTYRAA**K**LQRENYI

YDYESYE**K**TTRTSDV

NLRKQYE**K**SSRFMKV

KPGEMEK**K**MKILRES

GPFTVVV**K**ESCDGMG

FEELVEM**K**SNYYSFI

VATSRSE**K**EQLQALN

LSFGVPR**K**AILYPHE

EWLRNIE**K**VEVEAVN

AIAAQVW**K**LSTCDLC

DIHGPDA**K**LKGPKLK

ELHRTLS**K**VNAEMVQ

KGDSPEL**K**PRAVHKQ

NFSAAET**K**SDKKDCA

VPMTEET**K**SITLFPD

NTARLEI**K**STDFATS

DFQAANV**K**SSAHLRV

YDEITDL**K**QLTVVME

LNTLSEA**K**VETICHR

FRTWQTR**K**QFLLYRK

NRLAALP**K**GRPDRPR

EIVATAS**K**VDIAPHV

ALTILRR**K**DESETEW

LPLHDSL**K**LLQEQLT

TNRGHTV**K**AVCESFH

VVLPPIM**K**QPPMFSP

CGAQAGI**K**ISSVHKR

DPPPFMF**K**PVKEEDD

IIHDTQF**K**AQNLEEG

PTLLSLF**K**HECSRVI

LKALRVR**K**KTGGEKM

QQKELLN**K**RNMEVAM

IFPSNYV**K**PKDQESF

EASKEIA**K**LTCVVES

PTVTWLR**K**GQVLSTS

RVAELQR**K**PTRESEY

CTAQLNI**K**ERLIPPS

DSSLLKT**K**RKHKKKH

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LTRSPRV**K**IDTRADS

PFEVTWL**K**NNREIRS

XXXXXMS**K**LSFRARA

LAMETID**K**AKEVGAT

LSMSTHF**K**MLKKLVE

EIYRWPI**K**ESLKAMI

ECSSSQL**K**ASVCKPF

EGILMHI**K**PENHCSE

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INFLENL**K**ILEISED

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PPATPPP**K**TRHSPTP

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QPEDDDV**K**GQWDRLV

QYRLLSL**K**YHPDKGG

PVRPSVW**K**KHGVVNT

TPTYITA**K**ESQQMQS

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PTPGITR**K**EEAPENV

KSGRSKE**K**RKSKHKL

KAREFGK**K**VQEEXXX

VIQCLRS**K**EVFGFYN

AKSPAEA**K**SPEKEEA

EVTIMEE**K**ERAYTLE

NAKGMVE**K**WLQQVEQ

LQEQIVQ**K**NQEIKNM

KKEEVEQ**K**KNEYNFK

KVKSEVN**K**LYKLLEI

KLQRKKK**K**RKGSDEE

SEEDLSG**K**HDTVTVS

DITMWLS**K**RLPQFLQ

RKSKHKL**K**KRRGHLS

DHLRNGS**K**PKRKNYA

QCDCWLS**K**SEGDGQT

ETYPRPT**K**EDVYVVG

SIRENGA**K**SQPDPFC

QVQITQE**K**MRKEAEK

IGVLAQS**K**FQAVRKK

ELHTEPM**K**LALSIEA

RRAPSPV**K**PASLERV

QVIDMSV**K**SLTLKVS

PDRTVAE**K**RGRKITL

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KASLFIN**K**EDVYEYY

IDIHYGV**K**SNSLAFI

MAGLGVE**K**LEKLMPE

LSCSQYH**K**MYRTVKA

PGFQGRL**K**YNAFCEL

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NWLSNAI**K**EFGFSGL

SAMQSLI**K**YSGSFAR

QMFLNDY**K**EVPFDAL

RKESITE**K**KPKKGLV

EKQAQLE**K**ELSAALQ

HALAIAE**K**SQEFLEA

SNDSTHF**K**ALHSNQA

LFEVALP**K**TAHHFVI

SPREESN**K**RQRTYXX

LLPTPEE**K**KPPPKRI

KLKEQLT**K**VKECYSP

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SLHGTVM**K**INQERAE

EPWTTDA**K**IQNKNCP

PGIDATT**K**LNVGAPD

RARGHAV**K**NSSHVDR

QVFFNMV**K**ETTSNCF

SEECTSR**K**PGQTVNN

MFCLEQE**K**RLPFSKR

GSEQDGW**K**AEPGEGT

RCICGLY**K**DEGLMIQ

SLQFEED**K**ENSSKEI

QSILEQD**K**LTPESTR

VFVGRAQ**K**NQGDRSN

LTNVSRA**K**AEDALSE

FRVRAVN**K**AGESEPS

PPVTSPL**K**PNTPPSA

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NIAIEFN**K**PQYFSIM

LINGAEE**K**ILEDFRK

ELEALNG**K**HQQISGR

SASPAVT**K**DQYSATS

STETIIC**K**DEYEAPT

PDVNVNL**K**GPKIKGD

MHIDTVL**K**EIAKTVL

SFQAANA**K**SAANLKV

DLASLPE**K**AAANEEG

FTLPLYN**K**TAYVGEN

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SMLEERI**K**RSAKRPS

KKSLLEE**K**ERFQREV

ASSMTEM**K**FASMSAQ

ETSKVTL**K**EQQHQLE

DRLITLS**K**KKAGHDQ

CYYHVIS**K**VPRIRTP

PQKTAFL**K**DRLNAIQ

KPSVGEE**K**DIIIFVG

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EKLLRES**K**ELADLAR

DTVVIAS**K**PYAFDRV

LPTKASS**K**AELEIAN

LYICDYH**K**NLIQSVR

VEHPQRS**K**KAVWHKL

EACIELE**K**IVGELKK

TRHLDEM**K**SAMRKGH

FLLNEIE**K**EEKEKLW

CEVTGTI**K**AVDRLTA

STQTESN**K**KMEENEK

LPESGAT**K**VEDMLTL

ALCSWTA**K**KDNHLNF

SGLDRMA**K**HLSQRKT

RLQICDI**K**PRDQGEY

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KQEIMTL**K**EEQNKMQ

KIQFLKM**K**IAEKQRQ

TVAQYPF**K**VPGPPGT

ERSDTNE**K**RSVDSSA

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SSRESVS**K**AGMPVSA

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LAVEIRQ**K**SFGPKHP

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ANVEGDL**K**GPALDIK

LLLPVLI**K**EQLEPPE

NSAGLLI**K**AYNRAGS

DLVVDVG**K**PLTMVVP

LIEPSVF**K**EAATPEE

GNPFQAN**K**HGERPVD

AELRIEL**K**KANNKVC

EIIHDRI**K**REYGLET

HVYYSRS**K**TTHIIAT

DSEVDNQ**K**RGKRHYE

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GTRNYYR**K**IGYRLQG

SLLESVQ**K**LDLEATI

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VGASQEC**K**KEADEQL

LQEERTC**K**VCMDKEV

PSLDLSC**K**QLASGLL

MEVHEGD**K**YRMHSDR

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IQNERLY**K**EDYHKTK

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GPPEGPL**K**VTGVTAE

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LRQCMLP**K**SAALSEK

AYEEQKK**K**VADHPNR

MLRDLQE**K**INQQENS

QVFNQIV**K**SRPHDNI

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SNINVEA**K**FNTVVSQ

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EKSPLPQ**K**RITNIIE

QAKIQEA**K**EKVQINV

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KSALGFI**K**VAVTVMD

IKVKSEE**K**IKVVEKS

RTWAEAA**K**TVLEKYP

TVLHGNR**K**DNELIRV

VKQAEKA**K**DSVYKRS

TNGEHTS**K**ATLELSP

DFACANN**K**ICDELEE

LHSNPEP**K**TFTFDHV

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NALNVSN**K**LYREGWD

ALIRTLG**K**QLNVNRR

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ISVEQDG**K**VKTLMEF

HQNTMED**K**FIVCLNK

NLNSLCR**K**YHSAELE

KAAALAC**K**KLKSLGL

PSVSTHI**K**VKSEEKI

DEEEVSD**K**GSDSEEE

VGPDGLM**K**LNGSALN

SSEHDVL**K**EAVLKKL

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VTMDSAP**K**PFTDVSI

LVSDNNL**K**DYFERGR

GLRPILT**K**LYKEKGV

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LGIENQH**K**ISVPRAP

DCQRIEL**K**QGYTFVI

TDTVSDV**K**YKEDLTW

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EQWLDDC**K**RTFGAKE

QEVIGKL**K**GLCPSVA

ENGSLEI**K**MIRKEDQ

MEEIENL**K**KQHDLLK

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ATGLDEE**K**RARCDGK

KPENLSS**K**TRGSIPT

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YGAVTYR**K**SKRGPKQ

KVLASYQ**K**TRSAVIV

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KFRLEEQ**K**VRRQEQE

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PIETERS**K**CDITGLL

HPTEEAL**K**ISVASEP

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GSDQERT**K**KKRRGDR

PENHNNA**K**EPDSEQQ

SELSQLY**K**EAQAELE

VANVVGQ**K**TASIEIV

LSITVRT**K**KQELSEA

EFEQIML**K**AMQEFTL

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FREGQIL**K**VFGDKDA

KERISAA**K**VAEPPQR

IKASDIT**K**SSCKLTW

EVQVLDD**K**NVRRRFR

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KLEYIYA**K**QQALEAQ

DQLKLQE**K**DIQMWKV

RRVAQAQ**K**ALSDVAY

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DRMTEES**K**VEAELHA

FIRTRLE**K**EGIVFKS

YSSVSQR**K**YYSTKHF

KALLLEA**K**QKVPPVL

EANPLTW**K**QLLCDLV

IAEELSY**K**TAHEDIS

LQNTDAH**K**RAFHEIY

CKATLSE**K**LGGAEVA

KEETNIV**K**LLEKQYQ

CNSVHLC**K**QLVESGA

LITPEDR**K**YGTTNLH

LLDYQDH**K**GADSHAG

TECHARF**K**TPEDAQA

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KNLDHVN**K**ILKAKKL

ANQGCVR**K**VYLKDTA

LQQATPP**K**NYQPAAH

LCSQLLC**K**DPAERLG

QEEVIEV**K**VPAVHTK

KTKRISA**K**KRDVQQQ

CLTENVL**K**EIAKAGR

EDEETDQ**K**CSLSSSE

LISLQEA**K**DICEEQV

LRNLVHS**K**HKMIAMG

IVCSSEI**K**RQVVETM

EPPRFVS**K**LNSLTVV

NCRCEIS**K**SLCCRNL

STGGEHK**K**SDRKEEP

AETLNQS**K**ERNRFSL

SEPSELI**K**VLGEKPE

VAGGAIS**K**PLTDQTV

AFKNIAS**K**IANELKL

PVLQEEI**K**ESQDPQH

RSLVEQH**K**RERKELE

VPGPDAQ**K**TETPSVS

QSISENE**K**LQKLKER

DLKGTLG**K**LLDERLV

GKTGNTE**K**FGRFRQC

KWIQLLE**K**IEEALKV

VTAEPEP**K**IPDVAPI

VVRGWLH**K**QDSSGMR

TEVELFH**K**DIEAFKE

LTKQIQE**K**QGQLSEL

VPTFTIP**K**LYQLQVP

MGLKGPL**K**TPIAAGH

VVYCEEL**K**CWCRAIV

SSEEPTE**K**EPPGQLQ

HLRTRVQ**K**VQVKEEP

GRIETDT**K**VLEILYE

LACQENC**K**KTLTLIE

IGTQTNL**K**CRRGIEN

NSKVKHK**K**KHYKPSS

EPIRNSV**K**ERESERN

SVTRSTF**K**FTRLTEG

TEDLEDA**K**KELAIRL

PDSSPSR**K**PPPISKK

IPMAPSC**K**LLFEVHN

VIIENVS**K**STSTSEP

GVNLIRS**K**VEDPAVI

PICRGII**K**GTVRTFL

CTTHLYI**K**APAKFVK

LVPGNIF**K**SSGLTDG

RAENLRF**K**EEGVRDV

EIEVSQL**K**EQSVLEF

IENIDFN**K**SGSSTAS

LEDEAAR**K**AKQGKEN

LVAEFPE**K**EAQLSLV

EISLNHN**K**IEQIIAQ

QSLKDLE**K**EFVDFWE

PLGLIML**K**TTSEELA

GTAPTTL**K**EPAPTTP

VSVNVSS**K**EFLQTES

LSMGTRR**K**VLVLGSG

LKEEIKK**K**KGIKEEV

EFWDVIQ**K**HCLEAHQ

NVLLTCC**K**DNVCRLW

TTASNYN**K**SESQESL

AKRELES**K**LQRLQAQ

TIAEQES**K**LNEAHKS

LKQQAKE**K**QAQLAQT

QLSLLPN**K**DLFIWDL

ATQLEQM**K**EDYSYIM

HQPVSFY**K**LKLTNNT

VRQVEAL**K**AENSHLR

WLQDVDD**K**YDRMKTC

ALGMHES**K**YLILPVH

GAVVEFV**K**ELQDIEV

CEIPVEV**K**PKARLLR

RLGSPSG**K**TGTCRIS

QDLLHTT**K**HQDVLLS

YVHTNGP**K**KKKVTLH

LHEFDSL**K**DPEVNEF

LEAENQI**K**KCDIRNK

KQLTDNL**K**EKALSFM

KEIKKLP**K**DAKKSST

TKMDAND**K**KIQSLEK

LAHWSPA**K**LLLQMDS

LEELQDL**K**GVWSELS

LEEHMFH**K**LIEAGET

AVAVARQ**K**DSGGSGR

EHLCGCW**K**QCPSCGA

SELHESW**K**YNMSFIN

GFYVVCA**K**NRFGIDQ

SHNVQQL**K**SRILMTA

KEAYEKS**K**GKHVGFR

KLRLMEQ**K**FQQVDEW

IFHGVMG**K**DEREGNS

NMHSARF**K**NGKQIRK

DKVDGLQ**K**QTESSSD

HLKQHCN**K**VLLRVRM

NSDQHYS**K**ESNYFYS

TGFALNL**K**PLAPAGI

DGNHLYL**K**IKNAMPE

QGLPGPE**K**LPGSLRK

PDFERVN**K**RLCPTTS

NKLPLPS**K**SVDWTHF

KFTMVKN**K**ALRKGFP

RQQSSSS**K**GDSPELK

KEFSDLE**K**KFKDKSQ

IGSLDVE**K**CKRATEI

ISLNDVS**K**AEGILLL

VNLHRIE**K**DVQRCDR

AQTADPI**K**VAEVPQP

FPLWEST**K**VVPLSKF

AGFEDEA**K**TSARDAA

CVSIEGY**K**TPYTDVN

AFEHFAQ**K**GPTWKEP

LSPDSFI**K**DNYGLNQ

SGEQVDG**K**GQAGSVS

LEEIRQA**K**AQRKQLH

VVEVFLE**K**FTTEWDN

RANKKKQ**K**VFQHNEL

LETGDRV**K**MKTLSAY

AEREQVI**K**LGTTNYD

DYCLDII**K**KFEVSEE

DMDEAIE**K**GEAEQSE

SSLSDDR**K**WIIFDGP

YCTSPDF**K**MGGASDV

FGVPSEP**K**NARVTKV

AMEESPR**K**KKKRKQE

WELYIPP**K**QNKSVLV

DSTADDS**K**DSVAQGT

VIQFELG**K**QKNIMPL

GGLRRAV**K**VQCTWSE

ENYIEEL**K**KQGFLLR

SFLLIAS**K**SVNMKKE

TFRWTSL**K**HSRSEPQ

IQESSPT**K**NNIAVSS

KEAVYEK**K**QAVHKEK

FLAPVFT**K**DEQKHRR

NQKRAEL**K**LVVDRLQ

HFQTHLA**K**LLETQEQ

QQRRYLE**K**RSKHSKK

GRTTDLS**K**GLQSPRG

RWIREIQ**K**VTKLDRD

KDKEEHG**K**IKREELD

CSGILTV**K**EPPSFLV

QKQFRLF**K**TAALVIQ

SNANMLR**K**GPAEDMS

KSEWMDL**K**KEYLALQ

TICSAYL**K**INSKGEG

DFPKVRA**K**EQTFMFP

IYTYFVY**K**TRNMDMK

KFAECLE**K**KVDMSKV

SIKAFAE**K**LSVKLKE

IANITAL**K**DQLLAAK

VMVKAYL**K**KYDPEVQ

EKSLKRI**K**DTNKDIS

NDLSTEN**K**LKVLKHD

KMVAWFE**K**SKDIIQS

KYRAALG**K**LPQQAND

FHCNILM**K**DDKDPQC

PDHMVLG**K**RLKGAFK

NLSVTSF**K**KIVYREY

VVENSEG**K**QEAEFTL

DTCVCTV**K**LKEPPRF

VQAENLV**K**EASEIPL

GVNSLEV**K**FRTRSEN

ADLGVIY**K**IKLRHDN

IQEVEYV**K**EEAKMVY

FGNAIEG**K**SNTVASL

SICQARA**K**ELEDSLQ

ISQLTEE**K**NDLRNMV

IPTIQWI**K**GDQELSN

GLSLEDS**K**KLTASPS

LLDSPLN**K**EVVKVSA

GSTFPDV**K**PDLEDVD

RESVNLG**K**SEGFKAG

VVDSGLH**K**EERYDLK

DTVRSSF**K**PGLEARL

PWMRLFF**K**IKPLVKS

SSHEAEE**K**LSEHKAL

KLKVKDN**K**KNRTKKK

GGGGGMA**K**ASAAELK

TQTPVSN**K**KPVFDLK

DFLIQTF**K**VFQKNQV

NGCMNRF**K**NALNSCD

NIELVDL**K**PLPTARR

RVQEAED**K**WRGAQAL

SDLHVNA**K**GPQVSGE

LYTQLEA**K**KAAIKPL

FLENEDT**K**FSLSDDQ

CLIHPRI**K**VGNEYVT

VEVPTVT**K**RERKIPE

SSSEDSE**K**VIAGLYQ

PVSMDIC**K**QEEKLGF

MACTWSV**K**EVASYQP

AQNRARA**K**EFHKKTL

GQPDEEL**K**PKKKVFE

GEVIALD**K**IFNKVEK

TLEERLD**K**ACEPGVD

CGRWLSL**K**KEDGRLE

RDAEELE**K**WIQEKLQ

INLAGVG**K**PSLPSEP

GLGKVGS**K**GREAPLM

RVTYSPR**K**EKALKIY

ERFDVGP**K**EKPLEEP

NEVINSP**K**GKKRKVE

RYLNEEY**K**KKMSYMI

AVYTCEA**K**NDYGVAT

QSSGIGS**K**AGVPSKS

QMIEKRS**K**LGESQTL

SDPTPDG**K**LFATQYC

RFTMEVP**K**KLTEWFK

AGAGETL**K**QECDSLG

DAHEDSF**K**SADESGQ

NVFNNLA**K**GFSEGTA

EPHIQPT**K**SSSRQNI

EPQLNRL**K**EKAQQLW

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LDVEIQD**K**PDKPTGP

IVSALWE**K**WLSLLEA

PGLELME**K**EVEPEGS

EILINNF**K**YIFSHLV

NIQNWVY**K**LSTSSDI

TTMDTNG**K**PLYILTY

SDAGIAG**K**VERNIPE

EEAGGSV**K**EEAGPEV

RLGVSLS**K**GLHHKAV

ELALARM**K**DLGIQCR

ELLLGHE**K**APAFRDY

EVQISTE**K**QQKNSTL

KHRLREL**K**LQVKAFA

RMIVRCR**K**QDFPLVK

LGSGTYF**K**KQFSDPV

EWIVESI**K**AGRLLSY

EHHPRVA**K**YAMENHS

EEEDEEE**K**EEDEEET

KTVPLTA**K**EERGMGA

GDPIPNV**K**WTKGKWR

HLTEETL**K**VTAIPEP

LEAMLRN**K**ELKLQES

ELTQEAL**K**VSAVPQP

RHLIEDL**K**FRQKVNL

EIAPEEE**K**PVPVAEE

LPEPPVL**K**VLSSLKP

SKGIAFV**K**FARSSQA

NTMDVFV**K**EPSFDWK

VTVIGIP**K**PKIQWFF

YIAETDE**K**KINRIRQ

EQAEIQI**K**EESKTAV

LQTGACY**K**SLPSRNG

WRADINS**K**KVLREAG

EKLSILE**K**EDETEVQ

TKIIEEE**K**KTLELKD

LLAPHRQ**K**WVERIRY

RWKPMSV**K**HTEKLER

KNTGELK**K**SKVLSHH

ARCLRVG**K**LNIDRLY

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ETREDRT**K**RLFRHYT

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RLSSWCL**K**KPGHVAE

IISSLTP**K**HLQAGMQ

EFSDDIV**K**IIQAAIN

YLDSTFT**K**RDPRGEY

IVSNEAG**K**ASCTTHL

NDNAPIF**K**EDPFISE

ENIQTLL**K**SKEQEVN

PVLIPEP**K**IRAVSPH

DRVQAIV**K**GTKQRLV

STGPITA**K**DEVELPR

HRDADET**K**EWIEEKN

LEPDLAE**K**NPPLFAQ

ENIHSRM**K**TVKLPKK

VPGFCLP**K**KGVTSIL

VKAGEVL**K**INADIAG

PGVQGDV**K**GPQVALK

TKHLETS**K**QLAAAFQ

PTSYQAP**K**HFHIPAG

SVHSREA**K**ESSAAQA

ERNIEAG**K**DDGLTDA

CSISQEL**K**LKSFTYE

SPQRLCS**K**HMPQLHS

VPVPVQK**K**EAPPAKV

ALKMSPY**K**DILETHL

VSRYGEL**K**SVPTTQC

QPSLRAA**K**EHAMPKD

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LKKLEEE**K**AEAAEAA

MDAENMR**K**ELAELES

SPLKEDA**K**APEKEIP

NVSSRGG**K**KFLPVLK

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QEERAFL**K**VDPELVV

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ADSLYVE**K**IDVGEAE

XXXXXXM**K**WVTFISL

VFRRDAH**K**SEVAHRF

DLGEENF**K**ALVLIAF

CPFEDHV**K**LVNEVTE

ESAENCD**K**SLHTLFG

EMADCCA**K**QEPERNE

DNEETFL**K**KYLYEIA

PELLFFA**K**RYKAAFT

ECCQAAD**K**AACLLPK

DELRDEG**K**ASSAKQR

LKCASLQ**K**FGERAFK

RLSQRFP**K**AEFAEVS

KLVTDLT**K**VHTECCH

DDRADLA**K**YICENQD

NQDSISS**K**LKECCEK

CEKPLLE**K**SHCIAEV

AADFVES**K**DVCKNYA

VLLLRLA**K**TYETTLE

DPHECYA**K**VFDEFKP

EEPQNLI**K**QNCELFE

FEQLGEY**K**FQNALLV

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DICTLSE**K**ERQIKKQ

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DFAAFVE**K**CCKADDK

TCFAEEG**K**KLVAASQ

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LDSEAFQ**K**RKQMQEI

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IILDTLE**K**CLAGQPK

KAQAAEM**K**AVHEAEG

KVSTEHN**K**ECLINIS

MHLIQTG**K**GEAIRIR

QELISLA**K**SRYSCRD

VVFVQTD**K**PVYKPGQ

ALKLQKG**K**QYLMWGL

TVPETGR**K**DTVVKVL

ALNDHFV**K**LISWYDN

AEFAEIT**K**LATDLTK

SIGLGYH**K**DLQTRAT

NCLAPLA**K**VIHDHFG

ALVGHLL**K**GYRHPSP

GRVHESV**K**RSNCYMV

EIIQDIS**K**DVVDESN

VTLGCLV**K**GYFPEPV

VFANMQM**K**LSQSRPI

ADGNFDP**K**PINTMNF

VVGYYCL**K**VPLVVFK

NRTWQDY**K**RGFGSLN

AEGSPQY**K**KWYFELI

GIISIPL**K**LPSLNKE

KQLRKIV**K**HEIMSVK

DGFAEST**K**RKAAVWP

LYPMLFN**K**LKNTISK

TRHMEAV**K**TQFLEQA

VVAASEA**K**EDSPAQT

ATAPEDD**K**APAEPPE

NNLHLQE**K**SDDPAVK

EENGMAW**K**EILNLLY

QHSPGLD**K**ENVELSP

TALAELV**K**HKPKATE

TVRKQVT**K**SYKMADE

EFWANLE**K**ETDWLRN

DVAVWFS**K**RLPTFVN

RFAGPFS**K**QTQIPDY

CAIYTYG**K**PVPGHVK

DLVPGSF**K**SQLQEGP

AAVRQRM**K**CSSMQRF

GELLITN**K**GSELAFA

WLTAYVV**K**VFSLAAN

ARYEREM**K**TYIPPKG

LSGFIPL**K**PTVKKLE

SVSRVEL**K**PGDNLNV

RVTAILD**K**LITMTIN

NMVIADV**K**MLSGFIP

KCCAADD**K**EACFAVE

ISCADAE**K**EIMRLGT

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SVRFVCQ**K**GFVLRGS

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QYDSTHG**K**FHGTVKA

KEYDPDG**K**GIISRKE

NLLQMTE**K**FFHAIIS

DLLVHCG**K**LCALVYK

PSFSSET**K**SACKEED

LMVCNHE**K**VGLQIRT

VERSYAV**K**SGKWYFE

YAVYSLS**K**SYIYLDT

MVLSAAD**K**TNIKNCW

LLKETAF**K**FKALKKV

GMRDIPM**K**YSCQRRA

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EISCWTV**K**IXXXXXX

TDQHGLA**K**FSIDTSS

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VTVQDFL**K**KQVLTSE

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GVELMEA**K**SQLFLKY

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PMTVICQ**K**DLSWSML

KVTSLKF**K**EKPTDLE

EILKSLD**K**EAIREDN

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LQLSGPD**K**VTISLLS

VAFNFFR**K**FYNKSED

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