iACP: a sequence-based tool for identifying anticancer peptides

Supplementary Materials

Supporting Information S1: The benchmark dataset contains 138 anticancer peptides and 206 non-anticancer peptides (see Eq.1)

I. 138 anticancer peptides
> ACP_1
GLWSKIKEVGKEAAKAAAKAAGKAALGAVSEAV
> ACP_2
GLFDIIKKIAESI
> ACP_3
GLLDIVKKVVGAFGSL
> ACP_4
GLFDIVKKVVGALGSL
> ACP_5
GLFDIVKKVVGTLAGL
> ACP_6
GLFDIAKKVIGVIGSL
> ACP_7
GLFDIVKKIAGHIAGSI
> ACP_8
GLFDIVKKIAGHIVSSI
> ACP_9
AACARFIDDFCDTLTPNIYRPRDNGQRCYAVNGHRCDFTVFNTNNGGNPIRASTPN CKTVLRTAANRCPTGGRGKINPNAPFLFAIDPNDGDCSTNF
> ACP_10
HGVSGHGQHGVHG
> ACP_11
FKCRRWQWRMKKLGAPSITCVRRAF
> ACP_12
KWKLFKKIKFLHSAKKF
> ACP_13
KSSAYSLQMGATAIKQVKKLFKKWGW
> ACP_14
GIGTKILGGVKTALKGALKELASTYAN
> ACP_15
GIGGKILSGLKTALKGAAKELASTYLH
> ACP_16
GIGGVLLSAGKAALKGLAKVLAEKYAN
> ACP_17
SIGAKILGGVKTFFKGALKELASTYLQ
> ACP_18
FLPLLAGLAANFLPTIICKISYKC

> ACP_19
FVQWFSKFLGRIL
> ACP_20
KWKIFKKIEKVGRNIRNGIIKAGPAVAVLGEAKAL
> ACP_21
GWLKKIGKKIERVGQHTRDATIQTIGVAQQAANVAATLK
> ACP_22
KWKLFKKIEKVGQNIRDGIIKAGPAVAVVGQATQIAK
> ACP_23
SQLGDLGSGAGQGGGGGGGSIRAAGGAFGKLEAAREEEFFYKKQKEQLERLKND QIHQAEFHHQQIKEHEEAIQRHKDFLNNLHK
> ACP_24
GIGKFLHSAKKFGKAFVGEIMNS
> ACP_25
GIGAVLKVLTTGLPALISWIKRKRQQ
> ACP_26
ALWKNMLKGIGKLAGQAALGAVKTLVGAE
> ACP_27
ACYCRIPACIAGERRYGTCIYQGRLWAFCC
> ACP_28
ECRRLCYKQRCVTYCRGR
> ACP_29
LKLKSIVSWAKKVL
> ACP_30
KWCFRVCYRGICYRRCR
> ACP_31
KSCCRNTWARNCYNVCRLPGTISREICAKKCDCKIISGTTCPSDYPK
> ACP_32
GLLSVLGSVAKHVLPHVVPVIAEHL
> ACP_33
GLLSVLGSVVKHVIPHVVPVIAEHL
> ACP_34
GLFKVLGSVAKHLLPHVAPVIAEK
> ACP_35
GLFGVLGSIAKHVLPHVVPVIAEK
> ACP_36
GLFVGVLAKVAAHVVPAIAEHF
> ACP_37
GLFVGLAKVAAHNNPAIAEHFQA
> ACP_38
GFVDFLKKVAGTIANVVT
> ACP_39
GLLQTIKEKLESLESLAKGIVSGIQA
> ACP_40
TRSSRAGLQFPVGRVHRLLRK
> ACP_41
FFGWLIKGAIHAGKAIHGLIHRRRH
> ACP_42

GLFDVIKKVASVIGGL
> ACP_43
GLFDIIKKVASVVGGL
> ACP_44
GRFKRFRKKFKKLFKKLSPVIPLLHLG
> ACP_45
GGLRSLGRKILRAWKKYGPIIVPIIRIG
> ACP_46
RRRPRPPYLPRPRPPPFFPPRLPPRIPPGFPPRFPPRFP
> ACP_47
GLLGPLLKIAAKVGSNLL
> ACP_48
GLICESCRKIIQKLEDMVGPQPNEDTVTQAASQVCDKLKILRGLCKKIMRSFLRRISWDILTG KKPQAICVDIKICKEKTGLI
> ACP_49
DHYNCVSSGGQCLYSACPIFTKIQGTCYRGKAKCCK
> ACP_50
FFHHIFRGIVHVGKTIHRLVTG
> ACP_51
KLAKLAKKLAKLAK
> ACP_52
KTCENLADTFRGPCFATSNC
> ACP_53
IDWKKLLDAAKQIL
> ACP_54
FLIGMTQGLICLITRKC
> ACP_55
ILPILSLIGGLLGK
> ACP_56
GLLGLLGSVVSHVVPAIVGHF
> ACP_57
GLLGLLGSVVSHVLPAITQHL
> ACP_58
GIKCRFCCGCCTPGICGVCCRF
> ACP_59
QSHLSLCRWCCNCCRSNKGC
> ACP_60
ILGPVISTIGGVLGGLLKNL
> ACP_61
FLPILASLAAKFGPKLFCLVTKKC
> ACP_62
GLWSKIKEAAKAAGKAALNAVTGLVNQGDQPS
> ACP_63
LLGMIPLAISAISALSKL
> ACP_64
GLPVCGETCVGGTCNTPGCSCSWPVCTRN
> ACP_65
GVPICGETCTLGTCYTAGCSCSWPVCTRN

> ACP_66
GIPCGESCVWIPCISSAIGCSCKSKVCYRN
> ACP_67
GIPCAESCVWIPCTVTALIGCGCSNKVCYN
> ACP_68
GTFPCGESCVFIPCLTSAIGCSCKSKVCYKN
> ACP_69
GLLPCAESCVYIPCLTTVIGCSCKSKVCYKN
> ACP_70
GRDYRTCLTIVQKLKKMVDKPTQRSVSNAATRVCRTGRSRWRDVCRNFMRRYQSRVTQGLVAGE TAQQICEDLRLCIPSTGPL
> ACP_71
GETDPNTQLLNDLGNNMAWGAALGAPGGLGSAALGAAGGALQTVGQGLIDHGPVNVFIPVLIGPSW NGSGSGYNSATSSSGSGS
> ACP_72
GFKDLLKGAAKALVKTVLF
> ACP_73
KSCCPNTTGRNIYNACRLTGAPRPTCAKLSGCKIISGSTCPSDYPK
> ACP_74
KSCCPNTTGRNIYNTCRFGGGSREVCARISGCKIISASTCPSDYPK
> ACP_75
KSCCPNTTGRNIYNTCRLTGSSRETCAKLSGCKIISASTCPSNYPK
> ACP_76
MRKEFHNVLSSGQLLADKRPARDYNRK
> ACP_77
KSCCKNTTGRNIYNTCRFAGGSRERCAKLSGCKIISASTCPSDYPK
> ACP_78
FIFHIIKGLFHAGKMIHGLVTRRRH
> ACP_79
FLPAIVGAAAKFLPKIFCAISKKC
> ACP_80
FLPIIAGVAAKVLPKIFCAISKKC
> ACP_81
FLPIIAGIAAKFLPKIFCTISKKC
> ACP_82
FLPVIAGVAANFLPKLFCAISKKC
> ACP_83
FLPIIAGAAAKVVQKIFCAISKKC
> ACP_84
GLMDTIKGVAKTVAASWLDKLKCKITGC
> ACP_85
VNWKKVLGKIIKVAK
> ACP_86
VNWKKILGKIIKVAK
> ACP_87
FFSLLPSLIGGLVSAIK
> ACP_88

RFRLPFRRPPIRIHPPPFYPPFRRFL
> ACP_89
KWKLFKKIPKFLHLAKKF
> ACP_90
YKQCHKKGGHCFPKEKICLPPSSDFGKMDCRWRWKCCKKGSG
> ACP_91
GIPCGESCVFIPCITGAIGCSCKSKVCYRN
> ACP_92
GEFLKCGESCVQGECYTPGCSCDWPICKKN
> ACP_93
GLPTCGETCTLGTCYVPDCSCSWPICMKN
> ACP_94
GLPVCGETCFGGTCNTPGCTCDPWPVCTRN
> ACP_95
FVDLKKIANIINSIFGK
> ACP_96
GSIPCGESCVFIPCISSVIGCACKSKVCYKN
> ACP_97
GIPCGESCVFIPCISSVIGCSCSSKVCYRN
> ACP_98
GSIPCGESCVFIPCISAVIGCSCSNKVCYKN
> ACP_99
GSIPCEGSCVFIPCISAIIGCSCSNKVCYKN
> ACP_100
GIPCGESCVFIPCLTSAIDCSCKSKVCYRN
> ACP_101
GMWSKILGHLIR
> ACP_102
GKWMSLLKHILK
> ACP_103
GFGMALKLLKKVL
> ACP_104
GTGLPMSERRKIMLMMR
> ACP_105
GIACGESCVFLGCFIPGCSCKSKVCYFN
> ACP_106
GVIPCGESCVFIPCISSVLGCSCKNKVCYRD
> ACP_107
KLCGETCFKFKCYTPGCSCSYPFCK
> ACP_108
GDACGETCFTGICFTAGCSCNPWPTCTRN
> ACP_109
GIPCAESCVWIPPCTITALMGCSCKNNVCYNN
> ACP_110
IPCGESCVWIPCITAIAGCSCKNKVCYT
> ACP_111
AIPCGESCVWIPCISTVIGCSCSNKVCYR

> ACP_112
GEYCGESCYLIPCFTPGCYCVSRQCVNKN
> ACP_113
IPCGESCVWIPCISGMFGCSCKDKVCYS
> ACP_114
FLGWLFKWASK
> ACP_115
FLKWLFKWAKK
> ACP_116
KWKSFLKTFKSAKKTVLHTALKAISS
> ACP_117
KWKSFLKTFKSLKKTVLHTLLKAISS
> ACP_118
MPFLFCNVNDVCNFASRNDYSCNYYSNSYSFWLASLNPER
> ACP_119
KWKLFKKIGAVLKVL
> ACP_120
GACFSIAHECGA
> ACP_121
TCCATGACGTTCCTGACGTT
> ACP_122
KRFKQDGGASHASPASS
> ACP_123
KRAKAAGGWSHWSPWSSC
> ACP_124
LLGDFFRKSKEKIGKEFKRIVQRIKDFLRNLVPRTES
> ACP_125
FLGALFKVASKVLPSVKCAITKKC
> ACP_126
GIGKFLKKAKKFGKAFVKILKK
> ACP_127
GIGKFLKKAKKGIGAVLKVLTTGL
> ACP_128
VECYGPNRPQF
> ACP_129
KRFKQDGGWSHWSPWSSC
> ACP_130
RQVFQVAYIIIKA
> ACP_131
KAFDITYVRLKF
> ACP_132
DFKLFAVTIKYR
> ACP_133
DFKLFAVYIKYR
> ACP_134
WHSDMEWWYLLG
> ACP_135

HTMYYHHYQHHL
> ACP_136
RLVSYNGIIFFLK
> ACP_137
GRENYHGCTTHWGFTLC
> ACP_138
ASSSYPLIHWRPWAR
II. 206 non-anticancer peptides
> non-ACP_1
MTISLIWGIAMVVCCCIWVIFDRRRRKAGEPPL
> non-ACP_2
MFATPLRQPTNASGARPAVSMDGQETPFQYEITD
> non-ACP_3
LLWRKVAGATVGPGPVPA
> non-ACP_4
DSPDPMNGASSNALIAKMNSAKLLYQHY
> non-ACP_5
NNQEVIDAISQAISQTPGCVL
> non-ACP_6
KKVVEKNADPETTLLVYLRRKLGLCGTKLGCGEG
> non-ACP_7
CSRLLPSLAQEEG
> non-ACP_8
KNDFAALQAKLDADAAEIEKWWSDSR
> non-ACP_9
VDREQLVQKARLAEQAERYDD
> non-ACP_10
RPLRRVVLFYQGKLCSMAGNFWQSSHYLQW
> non-ACP_11
GAAGERKLCLLSLLLIGA
> non-ACP_12
MFRKLLKMWILLRPTHWLILIALCAVTCAGYWLLWSE
> non-ACP_13
HLRGPADSGWMPQAAPCLSGAPQAS
> non-ACP_14
XSARLTVLLRHLGCRSAGTI
> non-ACP_15
NNPNNSNSHLRPHAYNNSRRDDSD
> non-ACP_16
VVILASLSVMFLVSLWQQKIRERLPPGPTPLPFIGNY
> non-ACP_17
ICLSCLISFFLWNQNRAKGKLPPG
> non-ACP_18
VVMNSLRVILQAS
> non-ACP_19
ARPRLDLQLVQRFVRIQKVF
> non-ACP_20

MLAKGLSLRSVLAKGCQPFLSPTWQSSVLATGGGANIS
> non-ACP_21
AAGLPGAALPLRKRPLRAPSPEPAAPRGAAGLVV
> non-ACP_22
PPMPSAPPVHPPP
> non-ACP_23
SCPIDKRRPLIAFLRRLRD
> non-ACP_24
RLGLWASGLILILGFLKLLRLLLRRQRLARAMD
> non-ACP_25
FSPQRDRFQAEGS
> non-ACP_26
GTLWALVFLGILVGMVVPSPAGTRANNTLLDSRG
> non-ACP_27
MNRLLQKGTSLVPSWRTR
> non-ACP_28
MTTSLIWGIAIAACCCLWLILGIRRRQT
> non-ACP_29
ATLANGMSLQPPLEEVS
> non-ACP_30
PLTATNSGLAVNN
> non-ACP_31
VRACHKVCRCLLSGFGGRVDAGQPELLTER
> non-ACP_32
TAGILLLLLLGTLEGS
> non-ACP_33
MEPSILLLLALLVGFLLLLVRGH
> non-ACP_34
MKNCFQLLCNLKVPAAGFKNTVKS
> non-ACP_35
SVIHTQAHASGLQQVPQLVPAGPGGGGKAVAPSKQSK
> non-ACP_36
KPLGLLKPSSLMKVSGRFKAHQDA
> non-ACP_37
ARTLNNKLSLSKPKFSGFT
> non-ACP_38
LLLVIIWTLFGPSGLGEELLSLSLASLLPAPASPGPP
> non-ACP_39
WPGILVGGARVASCRYPALGPRLA
> non-ACP_40
RSVKGLVALITGGASGL
> non-ACP_41
AAAALRARILQVSSKVN
> non-ACP_42
TGCCIAGRLANLDDQNLTVAL
> non-ACP_43
GSILGFLQIATVLTVLLLLK

> non-ACP_44
AARQIGSCLMRCRTLDTTSP
> non-ACP_45
WGCRGRRWAFARVDGGSCHRRGAPTGSTSNQIR
> non-ACP_46
YAKPGAVRSPAQILQWQVLPNTVPAKS
> non-ACP_47
RMAGPWLSLHEARLLGTRGAAAPKAV
> non-ACP_48
SISNRAAVPEHGVAPDAERL
> non-ACP_49
PNFSMETWLLLV
> non-ACP_50
PRPPSKTYRGAFQN
> non-ACP_51
SVLVKGCQPFLSAPRECPGHPRVGT
> non-ACP_52
LVTPPKALLKPLSIPNQ
> non-ACP_53
KMQGSRMDEQRCS
> non-ACP_54
VIADDLPPTCIRP
> non-ACP_55
LPGGLRVLVQTGH
> non-ACP_56
GWIWRWGWGRRCLGRPGLPGPGPGPATPLFLLLL
> non-ACP_57
RGIRGSSAARPSGRRRDPAGRTTETGFNIFTQHD
> non-ACP_58
QQEKEFLESYPQNCPPDALPGTPGNLD
> non-ACP_59
APARRVLQVKRVMQESSLSPAHL
> non-ACP_60
KVAPGGPTGYPGNLTAEQEQKLGELKMILL
> non-ACP_61
FLASYPQKCPAGSLPGTPGNTDE
> non-ACP_62
MDAKARNCLLQHREALEKDIKTSY
> non-ACP_63
ASRQLLVAPPEAL
> non-ACP_64
MISNGIGTVTTGKRSMCLFPLLLIGLWGC
> non-ACP_65
MTLRNFGMGKRSIEDRVQEEARCLVEELRKTNASPC
> non-ACP_66
AVFGLGGVGLSVIMGCKAAGASRIIAVDIN
> non-ACP_67

PNAKQSILQKNPDDVVIVAAYRTA

> non-ACP_68

AMELLLTATIFYLVLWVVKAFRLQVPKGLKSPPGP

> non-ACP_69

LLAAGFCPAVLCH

> non-ACP_70

AASVNDEQHQRIIKYGRALVLDIVEQ

> non-ACP_71

IARLREDGIQKRVIQEGRGELPDFQDG

> non-ACP_72

FIVVMNILALTLPFLAAEVQN

> non-ACP_73

CQNGRRANRTVRFARTA

> non-ACP_74

WVTVRSQQRGLFPAI

> non-ACP_75

LLRSCPLQGSPGRPRSV

> non-ACP_76

LNDGHFMPVLGFGTYAPPEVPRNRAVEV

> non-ACP_77

HLGRPSAPTIVAQPVSGLASPASFQPEQFQYTLDNNVLT

> non-ACP_78

RPEPGGCCCRRTVRANGC

> non-ACP_79

SWVEENRASFQPPVCNKLMHR

> non-ACP_80

VFHRVRWAPELGASLG

> non-ACP_81

RAKVLTLDGMNPRVRRVEYAVRGPIVQRALELEQELRQ

> non-ACP_82

LLQRARLAEQAERYDDMASAMKAVTELNEPLS

> non-ACP_83

ALIQKLNSDPQFVLAQNVGTTHDLLDICLKRATVQRA

> non-ACP_84

AALPMLWTGLVLLGLLGFPQTPAQGHDTVQPNFQQ

> non-ACP_85

QRRQNDSSVFLAIMVAAAVES

> non-ACP_86

CNAPGCGQRFTNEDHLAVHKHKHEMTLKFGPARTDS

> non-ACP_87

LVLLTVQNSALILTLNYSRIMPGYD

> non-ACP_88

TVLSPPQRFKRILQAMMLAVAVV

> non-ACP_89

ISRGLLLLAALCCLAPSFL

> non-ACP_90

VAGTESAQGPPGPAASLELWLNKATDPS

> non-ACP_91

QYLRIRTVQPEPDYGAAV

> non-ACP_92

ASPTQTPPTTSTIRVARRSRVALVAM

> non-ACP_93

TIWRNQHTYKMATSASANLSKIVKKNYMELPQDGKVQ

> non-ACP_94

LSITRGLLLLAALCCLAPIS

> non-ACP_95

ILLSIWRQSSGRGKLPPGPIPLPIIGNIFQ

> non-ACP_96

LLLLSWVALGPRSLEGADPGTPGEAEGPACP

> non-ACP_97

LRVKRAMQEASFMPPLLPPAAHQRFSTVPAVP

> non-ACP_98

GLLLLAGLCCLVFGIMAEDAQVAQGPSQQI

> non-ACP_99

RHVGLLCATGPQRWRF

> non-ACP_100

AAVALARPKPPLRHQEHLQNEPDS

> non-ACP_101

SRVNDQSQASRNGLKGKVLTLDTMNPCV

> non-ACP_102

AAALGPGVLQATRAFHTGQPRLAPLPPLPEYGGK

> non-ACP_103

LCTSGLWTAQASTNESSNSHRGLAPTNV

> non-ACP_104

PAIQPVLSGLSRIVNGEEA

> non-ACP_105

GCQASLSTAQERLGHPGVPTREGVR

> non-ACP_106

RKVLILTLVVAACGFVLWSSNGR

> non-ACP_107

GRVRSRCPGPALLLLLALAARPALAGPPAAALQ

> non-ACP_108

CRITKPALLVLNQETAKVVQT

> non-ACP_109

KAEVCMAVPWLSLQ

> non-ACP_110

SHLELNNGTKMPTLGLGT

> non-ACP_111

LLLPEAAAERDAREKLALWDRRPDTTAPL

> non-ACP_112

LLALSLVLLYRYATYSHGFFKKLGIPGPKPLPLFGNVLS

> non-ACP_113

LLSLWRQSSGRGKLPPGPTPLPVIGNILQIGIKD

> non-ACP_114

AFKSMEVANFYYEADCLAAAYGGKAAPAAPPADRPGPR
> non-ACP_115
SLFWAARPLQRCGQLVRMAIRAQH
> non-ACP_116
MRPPRTLTSTATMSALSTSMPMEIDDVMDEDAVNGQA
> non-ACP_117
LLSLIGFCWAQYDP
> non-ACP_118
LWARSKNDQLRISFPPGLCWG
> non-ACP_119
PQGFDVDRDAKKLNKACKGMGTNEAAIIEILSG
> non-ACP_120
IFCLILWVVKAWQPRLPKGLKSPPGPWGWPLLG
> non-ACP_121
LDAASPGPLALLGLLFAATLLLSALFLL
> non-ACP_122
VTLLFKLYCLA
> non-ACP_123
ATRAAAARLVGTAASRTPAAARH
> non-ACP_124
RNKLDLETLTDILEHQIR
> non-ACP_125
RRLVLQARTYAQAAASPAPAAGPGQMSFTFASPTQVFF
> non-ACP_126
PGRSRSAADDINPAPANM
> non-ACP_127
LLSALTLETWVLLAVILVLLYRLG
> non-ACP_128
VMGHGLCPQGARAKAAIPAALRDHEST
> non-ACP_129
FLVSIAGLLYALVQLGQPCDCLPPLRAAA
> non-ACP_130
VRSVRAAVGGLRAISAPSAPCLPRPWGLRAG
> non-ACP_131
RGGCWPRGLQQLLVPGG
> non-ACP_132
APATPPRPLKRKKLQFTDVTPESSP
> non-ACP_133
EQAERYDDMAAAMKAVTEQGHELSNEERNL
> non-ACP_134
MPNDPSDNQLK
> non-ACP_135
TELLLAITVFCLGFWVVRALRTQVP
> non-ACP_136
LTADLLGAPFFTLPKELQLALLERQTVFL
> non-ACP_137
GHGRLVEIQGRLGVRIER

> non-ACP_138
LPFKLLLFVLLDGWTRLTH
> non-ACP_139
QALWLVLVLSMPPVLVAAVVGTLVSLVQ
> non-ACP_140
TASWLGNELHSFAEMTMMKIQGIR
> non-ACP_141
KHRTVLFRRWMAIICCLI
> non-ACP_142
LHRAQDYRRELDTLQSLLTTSQSSELQAAAALLKC
> non-ACP_143
TKGNDIADLDAVAQTLKKPADDANKAVN
> non-ACP_144
QLEMALAKLKKDMMRGGDAKQYQVWQS
> non-ACP_145
VSVDNPNDLMLMQWSLIRITIQEE
> non-ACP_146
QGKAGEVIVTGLRTEQLSLSDAKLLLEAAMR
> non-ACP_147
RGVGGPSQQVMTPQGRGTVAAAAAAATASIAGAP
> non-ACP_148
VGKSSKMLQHIDYRMRCILQDGRIFIGTFKA
> non-ACP_149
HHKDSSIHHLRLSANDAEDSLRM
> non-ACP_150
LNPDPCKPLAFI
> non-ACP_151
SLINQQITQVGHGGQAGRLTETNPLTENS
> non-ACP_152
IACLLPRVSNLELKQGKAGEVIVTGLR
> non-ACP_153
EPSTGLMLVEESRWVHLGRELLPATAP
> non-ACP_154
NATSSQDQFAKWARLNRKYEQLSQ
> non-ACP_155
EPQKTIWRLAIFLHLPLRLAVAKIY
> non-ACP_156
LFLVNVLAFGLAGYCFVRHNARCEAGV
> non-ACP_157
PTYERLNDPKNVFFRMPFARL
> non-ACP_158
WNHYLSCASPCPGYRLLCRIN
> non-ACP_159
EAAMAAAAAPGSGNGVGGGGGTAG
> non-ACP_160
LGSGHHDGSGDSLEMSSLDRAQ
> non-ACP_161

FYQNRAAAFEQLQKWKEVAQDCT
> non-ACP_162
ELNPKYVKALFRRAKAHE
> non-ACP_163
MAEALLLRATFYLLIGSANAAKPD
> non-ACP_164
RANALIKRGTMCMQQQQPMLSTQ
> non-ACP_165
RPKFALAQAQKCFALYRQAYTANNSSQVQAAMKGFEE
> non-ACP_166
YAQALTDQQQFGKADEMYDKCI
> non-ACP_167
GNMEKAIDMFNKAINLAKSEMEMAHLYSLC
> non-ACP_168
LSVALGPRSRSYRAPPPPRRRPGPHS
> non-ACP_169
MQESLRLQQQALEAR
> non-ACP_170
RKRLKEERQRQKKEARIAA
> non-ACP_171
GETRPSECIAALFDDRARPP
> non-ACP_172
LLEFAQLHNISSRTLQRQFVAS
> non-ACP_173
AASVNPLAAVELQRLSAQER
> non-ACP_174
QNCVFADNIKVGQMTEPLKDQQIIL
> non-ACP_175
LTMMAPAVAQQTDDETFV
> non-ACP_176
QQIQGGKELKDALAQL
> non-ACP_177
ERFTSNQMFFDLAQASASGGLNNKKI
> non-ACP_178
RQQEFLLLNGWLQLQCGHAERACILLD
> non-ACP_179
NWLCLSRAQQLNGDLDKARHAYQ
> non-ACP_180
YKELYYRLLTSPAADAGNTL
> non-ACP_181
EWRDLKGRADINKDDVV
> non-ACP_182
GWVTTLGPGSRGYRAPPPPRRSRE
> non-ACP_183
QMIENWRRQQQARREKAQADKERRARLQ
> non-ACP_184
QRKKKEARAAAMAAAAAQDPADSETP

> non-ACP_185

APATRSRYLLRLTVTLGPRSRSYHAPPPPRRRP

> non-ACP_186

ENWRKQKRERWEKIQADKERRARLQAEAQE

> non-ACP_187

LKEERQRQKKEARIAAMASAEGQDSAEAQD

> non-ACP_188

TLDRDGTLVRLRFTMVALITVCCPLVAFFF

> non-ACP_189

LFLTGCKVDLYTGISQKEGNEMLALL

> non-ACP_190

LDRDGTLVRLRFTLVALVTVCCPLVAFLFCVL

> non-ACP_191

LWRLCIGLHSAPRFLVAMAYLKYYQGTPC

> non-ACP_192

VAGTTAVAGQVPIMGAVKFGGDVCAAG

> non-ACP_193

AKLRRKHDKAMDEYEAMNKKLTAQK

> non-ACP_194

QLRSRSASPASTAKAQKAQ

> non-ACP_195

LIWTIFILHIAIFLVNTIGAATIDNLLWLLYLKLP

> non-ACP_196

PDPPADSPLDQTIQHLQGLTIQELPDPPTHLPE

> non-ACP_197

ERFAQLCEEHGILRENIIDLSNANRCL

> non-ACP_198

EEGLQGKLRLLRLLHQTNPYPQGPGTASQRRNRRRRRRR

> non-ACP_199

PTDSPLDRAIQHLQRLTIQELPDPPTDLPESNSNQ

> non-ACP_200

GPGTANQRRQRRRRWRRRWQQLLALA

> non-ACP_201

EEELRKRLRLIHLLHQTIDSYPTGPGTANQRRQRR

> non-ACP_202

TDTPLDLAIQQLQNLAIESIPDPPTNTPEALCD

> non-ACP_203

LRLIHFLHQTTDPYPQGPGTANQRRRR

> non-ACP_204

PVDTPLDLAIQQLQGLAIEELPDPPTSAPEPLNDV

> non-ACP_205

NTNVTPHLLAGMRLIAVQQPEDPLRVL

> non-ACP_206

QTLVHNGGRLPPDLQLSAEDSSSTPS

Supporting Information S2: The Independent dataset contains 150 anticancer peptides and 150 non-anticancer peptides (see Eq.2)

I. 150 anticancer peptides
> ACP_1
AAKKWAKAKWAKAKKWAKAA
> ACP_2
AAVPIVNLKDELLFPSWEALFSGSE
> ACP_3
AAWKWAWAKKWAKAKKWAKAA
> ACP_4
AIGSILGALAKGLPTLISWIKNR
> ACP_5
AKRHHGYKRKFH
> ACP_6
ALSKALSKALSKALSKALSKALSK
> ACP_7
ALWKDILKNVGKAAGKAVLNTVTDMVNQ
> ACP_8
ALWKTMLKKLGTMALHAGKAALGAAADTISQGTQ
> ACP_9
AWKKWAKAWKWAKAKWWAKAA
> ACP_10
FAFAKIIAKIAKKII
> ACP_11
FAFGKGIGKIGKKGL
> ACP_12
FAKAIAKIAFGKGIGKVGKKLL
> ACP_13
FAKALAKLAKKLL
> ACP_14
FAKFLAKFLKKAL
> ACP_15
FAKIIAKIAKIAKKIL
> ACP_16
FAKKFAKKFKKFAKKFAKFAFAF
> ACP_17
FAKKLAKKAKLAKKL
> ACP_18
FAKKLAKKLKKLAKKLAKKWKL
> ACP_19
FAKKLAKKLKKLAKKLAKLALALKALALKAL
> ACP_20
FAKKLAKKLKKLAKKLIGAVLKV
> ACP_21
FAKKLAKLAKKALAL
> ACP_22

FAKKLAKLAKKLAKAL
> ACP_23
FAKKLAKLAKKLAKLALAL
> ACP_24
FAKKLAKLAKKLLAL
> ACP_25
FAKKLAKLALKLAKL
> ACP_26
FAKKLLAKALKL
> ACP_27
FAKLAKKALAKLL
> ACP_28
FAKLFAKLAKKFAL
> ACP_29
FAKLLAKAFKKAL
> ACP_30
FAKLLAKALKKAL
> ACP_31
FAKLLAKALKKFAL
> ACP_32
FAKLLAKALKLKL
> ACP_33
FAKLLAKFLKKAL
> ACP_34
FAKLLAKLAKAKA
> ACP_35
FAKLLAKLAKKAL
> ACP_36
FAKLLAKLAKKFAL
> ACP_37
FAKLLFKALKKAL
> ACP_38
FAKLLKLAAKKLL
> ACP_39
FAKLWAKLAFGKGIGKVGKKLL
> ACP_40
FAKLWAKLAKKL
> ACP_41
FALAAKALKKLAKKLKKLAKKAL
> ACP_42
FALAKALKKAL
> ACP_43
FALAKKALKKAKKAL
> ACP_44
FALAKLAKKAKAKLKKALKAL
> ACP_45

FALALKALKKALKKLKKALKKAL
>ACP_46
FALALKALKKLLKKLKKLAKKAL
>ACP_47
FALALKLAKKAL
>ACP_48
FALKALKKLKKALKKAL
>ACP_49
FALLKALKKAL
>ACP_50
FALLKALLKKAL
>ACP_51
FKLAFKLAKKAFL
>ACP_52
FKRLAKIKVLRLAKIKR
>ACP_53
FLGALFHALSKLL
>ACP_54
FLGALFKALSHLL
>ACP_55
FLGALFKALSKLL
>ACP_56
FLGMIPGLIGGLISAFK
>ACP_57
FLGMIPKLIKKLIKAFK
>ACP_58
FLGWLFKWAKK
>ACP_59
FLGWLFKWAWK
>ACP_60
FLKLLKKLAAKFLPTIICKISYKC
>ACP_61
FLKLLKKLAAKLF
>ACP_62
FLPLIGRVLSGIL
>ACP_63
FLSLIPKLVKKIIKAFK
>ACP_64
FLSLIPSLVGGSISAFK
>ACP_65
FLWWLFKWAWK
>ACP_66
GFFALIPKIISSPLFKTLLSAVGSALSSSGGQE
>ACP_67
GFKMALKLLKKVL
>ACP_68
GIGKFLHAAKKFAKAFVAEIMNS

> ACP_69
GIGKFLHSAKKWGKAFVGQIMNC
> ACP_70
GIGKFLKKAKKFAKAFVKIINN
> ACP_71
GKFMSLLKHILK
> ACP_72
GKWKKILGHLIR
> ACP_73
GKWKKILGKLIR
> ACP_74
GKWKSLLKHILK
> ACP_75
GKWLSLLKHILK
> ACP_76
GKWMKLLKHILK
> ACP_77
GKWMSFLKHILK
> ACP_78
GKWMSLLKHWLK
> ACP_79
GKWMSLLKKILK
> ACP_80
GKWMSLWKHILK
> ACP_81
GKWMTLLKHILK
> ACP_82
GKWSKILGKLIR
> ACP_83
GLFAVIKKVAAVIKKL
> ACP_84
GLFAVIKKVAAVIRRL
> ACP_85
GLFAVIKKVASVIKGL
> ACP_86
GLFDVIAKVASVIKKL
> ACP_87
GLFDVIKAVASVIGGL
> ACP_88
GLFDVIKKVAAVIGGL
> ACP_89
GLFDVIKKVASVIKKL
> ACP_90
GLFGKLIKKFARKAISYAVKKARGKH
> ACP_91
GLFSVLGAVAKHVLPHVVPVIAEK
> ACP_92

GMWSKILKHLIR
> ACP_93
GMWSKLLGHLLR
> ACP_94
GQVWEATATVNAIRGSVTPAVSQFNARTAD
> ACP_95
GRRKRKWLRRIGKGVKIIGGAALDHL
> ACP_96
GSEGPLKPGARIFSFDGKDVLRHPT
> ACP_97
GVGSPYVSRLLGICL
> ACP_98
GWRTLLKKAEVKTVGKLALKHYL
> ACP_99
HHPHGHHPHGHHPHGHHPHG
> ACP_100
HPTWPQKSVWHGSDPNGRRLTESY
> ACP_101
HSHRDFQPVLHLVALNSPLSGGMRG
> ACP_102
ILPWKWPWWPWRR
> ACP_103
ILRWPWWPWRRK
> ACP_104
KAAKKAAKAAKKAAKAAKKAA
> ACP_105
KIAKVALAKLGIGAVLKVLTTGL
> ACP_106
KILRGVAKKILRTFLRRISKDILTGKK
> ACP_107
KILRGVAKKIMRTFLRRISKKILTGKK
> ACP_108
KISKRILTGKK
> ACP_109
KKKFPWWWPFKKKCKKKFPWWWPFKKKC
> ACP_110
KLAKKLAKLAKLAKAL
> ACP_111
KNWKKILGKIIKVVK
> ACP_112
KNWKKILKKIIKVVK
> ACP_113
KTKLFKKFAKKLAKKLKKLAKKL
> ACP_114
KWFKKIPKFLHLLKKF
> ACP_115
KWKFKKIPKFLHLAKKF

> ACP_116
KWKKFLKIGIGKFLHLAKKF
> ACP_117
KWKKLLKKPPPLLKKLLKKL
> ACP_118
KWKLAKKALALL
> ACP_119
KWKLFAKIGIGKFLHLAKKF
> ACP_120
KWKLFKKALKKLKKALKKAL
> ACP_121
KWKLFKKIGIGAFLHLAKKF
> ACP_122
KWKLFKKIGIGAVLKVLKKG
> ACP_123
KWKLFKKIGIGKFKLAKKF
> ACP_124
KWKLFKKIGIGKFLHSAKKF
> ACP_125
KWKLFKKIPHLAKKF
> ACP_126
KWKLFKKIPLAKKF
> ACP_127
KWKLFKKIPLKKF
> ACP_128
KWKLFKKKTKLFKKFAKKLAKKL
> ACP_129
KWKSFAKTFKSAKKTVAHTALKAISS
> ACP_130
KWKSFLKTFKSAKKTVAHTAAKAISS
> ACP_131
KYKKALKKLAKLL
> ACP_132
LGGIVSAVKKIVDFLG
> ACP_133
LLGDFKRIVQRIKDF
> ACP_134
LPKWKVFKKIEKVGRNIRNGIVKAGPAIAVLGEAKALG
> ACP_135
MNFNKLFVFVALVLAVCIGQSEAGWLKKIGKKIERVGQHTRDATIQTIGVAQ
> ACP_136
MNFQQRLQSLWTLARPFCPPLLATASQMQMVVLPCLGFTLLLWSQVSGAQGQEFHFGPCQVKGVVPQ
> ACP_137
MPKEKVFLKIEKMGRNIRN
> ACP_138
MPRWRLFRRIDRVGKQIKQGILRAGPAIALVGDARAVG
> ACP_139

MRKWFHNVLSSGQLLADKWPAWDYNRK
> ACP_140
MWKEFHNVLSSGQLLADKRWARWYNRW
> ACP_141
MWKWFHNVLSSGQLLADKWWAWWYNWW
> ACP_142
MWKWFHNVLSSWQLLADKRPARDYNRK
> ACP_143
NKWKKILGKIIKVVK
> ACP_144
NYHNRTVEVRTLKSFSTLANNFVLIVSQLQPSQENEMFSIRGDSAHRRFLLFRRAFKQLDVEAAL
> ACP_145
PDEDAINDALNKVCSTGRRQRSICKQLLKK
> ACP_146
PEWFKCRRWQWRMKKLGA
> ACP_147
RGDLLRHVVKILEKYL
> ACP_148
RKAFRWAWRMLKKAAPSITCVR
> ACP_149
RWGKWFKKATHVGKHVGKAALTAYL
> ACP_150
SWLSKTAKKLENSAKKRISEGIAIAIQGGPR
II. 150 non-anticancer peptides
> non-ACP_1
AAEFPDFYDSEEQMGPHQEAEDEKDRADQRVLTEEEKKELENLAAMDLELQKIAEKFSQR
> non-ACP_2
AAKPMGITCDLLSLWKVGHAACAAHCLVLGDVGGYCTKEGLCVCKE
> non-ACP_3
ACNFQSCWATCQAQHSIYFRRAFCDRSQCKCVFVRG
> non-ACP_4
ACYCRIGACVSGERLTGACGLNGRIYRLCCR
> non-ACP_5
AEVAPAPAAAAPAKAPKKKAAAKPKKAGPS
> non-ACP_6
AFPPPNVPGPRFPPPNFPGPRFPPPNFPGPRFPPPNFPGPPFPPPIFPGPWFPPPPPFRPPPFGPPRFP
> non-ACP_7
AGANDLCQECEDIVHLLTKMTKEDAFQDTIRKFLEQECDILPLKLLVPRCRQVLDVYLPLVIDYFQGQIKPKA ICSHVGLC
> non-ACP_8
AGDPLADPNSQIVRQIMSNAAWGPPLVPERFRGMAVGAAGGVTQTVLQGAAAHMPVNVPIPKVPMGPSWNGSKG
> non-ACP_9
ALPKKLKYLNLFNDGFNYMGVV
> non-ACP_10
ALSILKGLEKLAKMGIALTNCKATKKC
> non-ACP_11
ALWKDILKNAGKAALNEINQLVNQ
> non-ACP_12

ANTAFVSSAHNTQKIPAGAPFNRNLRAMLADLRQNAAFAG

> non-ACP_13

APPGARPPPGPPPPGPPPPGP

> non-ACP_14

AQRCGDQARGAKCPNCLCCGKYGFCGSGDAYCGAGSCQSQCRGCR

> non-ACP_15

ATAVDFGPHGLLPIRPIRIRPLCGKDKS

> non-ACP_16

ATCDLFSFRSKWVTPNHAACAAHCLLRGNRGGRCKGTICHCRK

> non-ACP_17

ATCDLLSGIGVQHSACALHCVFRGNRGGYCTGKGICVCRN

> non-ACP_18

ATCDLLSGTGINHSACAAHCLLRGNRGGYCNGKAVCVCRN

> non-ACP_19

ATCDLLSMWNVNHSACAAHCLLLGKSGGRCNDDAVCVCRK

> non-ACP_20

ATCYCRTGRCATRESLSGVCEISGRLYRLCCR

> non-ACP_21

ATPATPTVAQFVIQGSTICLVC

> non-ACP_22

ATRVVYCNRRSGSVVGGDDTVYYEG

> non-ACP_23

AVDFSSCARMDVPGLSKVAQGLCISSCKFQNCGTGHCEKRGGRPTCVCDRCGRGGGEWPSVPMPKGRSS
RGRRHS

> non-ACP_24

AVTCNTVVSSLAPCVPFFAGSAAQPTAACCNGVRSLNSAARTTPDRRTACNCIKSSASSIGLNYNKAAKLPSRCT
VNVTVPISPSVNCAT

> non-ACP_25

CAWYNISCRLGNKGAYCTLTVECMPSCN

> non-ACP_26

CLAGRLDKQCTCRRSQPSRRSGHEVGRPSPHCGPSRQCGCHMD

> non-ACP_27

CSCRTSSCRFGERLSGACRLNGRIYRLCC

> non-ACP_28

DAPGHPGKHYLQVNVPSDVRTIGVAGGGVQQCFRVTPGAWNDTRALVSNGAQVEVWGYTVADCA
NRTTANQKYYDKAAAPSDSSTYFWFTLKNLRV

> non-ACP_29

DDMTMKPTPPPQYPLNLQGGGGGGSGDGFGFAVQGHQKVWTSDNGRHEIGLNGGYGQHLGGPYGNSE
PSWKVGSTYTYRFPNF

> non-ACP_30

DFKDWMKTAGEWLKKKGPGILKAAMAAAT

> non-ACP_31

DHHHDHGHDDHEHEELTLEKIKEKIKDYADKTPVDQLTERVQAGRDYLLGKGARPSHLPARVDRHLSKLTA
AEKQELADYLLTFLH

> non-ACP_32

DIQIPGIKKPTHRDIIIPNWNPNVRTQPWQRFGGNKS

> non-ACP_33

DLRFLYPRGKLPVPTLPPFNPKPIYIDMGNRY

> non-ACP_34

DLRFWNPREKLPLPTLPPFNPKPIYIDMGNRY

> non-ACP_35

DSHEKRHHGYRRKFHEKHHSHREFPFYGDYGSNYLYDN

> non-ACP_36

DVQCGEGHFCHDQTCCRASQGGACCPYSQGVCCADQRHCCPVGF

> non-ACP_37

EADEPLWLYKGDNIERAPTTADHPILPSIIDDVKLDPNRRYA

> non-ACP_38

EIRLPEPFRFPSPTVPKPIDIDPILPHPWSPRQTYPIIARRS

> non-ACP_39

EKKCPGRCTLKCGKHERPTLPYNCGKYICCVPVKVK

> non-ACP_40

ELPKLPDDKVLIRSRSNCPKGKVWNGFDCKSPFAFS

> non-ACP_41

ENDHRMPNNLNRPNNLSKGGAKCGAAIAGGLFGIPKGPLAWAAGLANVYSKCN

> non-ACP_42

ENFFKEIERAGQRIRDAIISAAPAVETLAQAQKIIKGGD

> non-ACP_43

ERGSRGQRCGPGEVFNQCGSACPRVCGRPPAQACTLQCVSGCFCRRGYIRTQRGGCIPERQCHQR

> non-ACP_44

ETESTPDYLKNIQQQLEEYTKNFNTQVQNAFDSDKIKSEVNNFIESLGKILNTEKKEAPK

> non-ACP_45

FAEPLPSEEEGESYSKEPPEMEKRYGGFM

> non-ACP_46

FFRHLFRGAKAIFRGARQGWRAHKVVSRYRNRDVPETDNNQEEP

> non-ACP_47

FFSASCVPGADKGQFPNLCRLCAGTGENKCA

> non-ACP_48

FGLPMLSILPKALCILLKRKC

> non-ACP_49

FSFKRLKGFAKKLWNSKLARKIRTKGLKYVKNFAKDMLSEGEEAPPAAEPPVEAPQ

> non-ACP_50

FSKYERQKDKRPYSERKNQYTGPQFLYPPERIPPQKVIKWNEEGLPIYEIPGEGGHAEPAAA

> non-ACP_51

GEILCNLCTGLINTLENLLTTKGADKVKDYISSLCNKASGFIATLCTKVLDFGIDKLIQLIEDKVDANAICAKIHAC

> non-ACP_52

GFGCPLDQMQCHRHCQTITGRSGGYCSGPLKLTCTCYR

> non-ACP_53

GFKLKGMARISCLPNGQWSNFPPKCIRECAMVSS

> non-ACP_54

GGLKKLGKKLEGVGKRVFKASEKALPVAVGIKALGK

> non-ACP_55

GGLKKLGKKLEGVGKRVFKASEKALPVLTGYKAIG

> non-ACP_56

GILDSFKQFAKGVGKDLIKGAAQGVLSTMSCKLAKTC

> non-ACP_57

GILDSLKNLAKNAGQILLNKASCKLSGQC

> non-ACP_58

GILDTLKNLAISAAKGAAQGLVNKASCKLSGQC

> non-ACP_59

GILDTLKQFAKGVGKDLVKGAAQGVLSTVSCKLAKTC

> non-ACP_60

GKQYFPKVGGRLSGKAPLAAKTHRRLKP

> non-ACP_61

GKWGWIYITILFADVGGFKSSRHPEERRVQERRFKRITRGPD

> non-ACP_62

GLFRRLRDSIRRGQQKILEKARRIGERIKDIFRG

> non-ACP_63

GLFSILRGAAKFASKGLGKDLTKLGVDLVACKISKQC

> non-ACP_64

GLFTLIKCAYQLIAPTVACN

> non-ACP_65

GLGSVFGRLARILGRVIPKVAKKLGPKVAKVLPKVMKEAIPMAVEMAKSQEEQQPQ

> non-ACP_66

GLLCYCRKGHCKRGERVRGTCGIRFLYCCPRR

> non-ACP_67

GLLDSIKGMAISAGKGALQNLLKVASCKLDKTC

> non-ACP_68

GLLDSLKNLAINAAKGAGQSVLNTLSCKLSKTC

> non-ACP_69

GLLNGLALRLGKRALKKIIKRLCR

> non-ACP_70

GLLRASSVWGRKYYVDLAGCAKA

> non-ACP_71

GLLSGVLGVGKKVDCGLSGLC

> non-ACP_72

GLLSRLRDFLSDRGRRLGEKIERIGQKIKDLSEFFQS

> non-ACP_73

GLMSVLGHAVGNVLGGLFKS

> non-ACP_74

GLRSKIWLWVLLMIWQESNKFKKM

> non-ACP_75

GLVSSIGKALGGLLADVVKTKEQPA

> non-ACP_76

GLVSSIGRALGGLLADVVKSKEQPA

> non-ACP_77

GPDSCNHDRGLCRVGNCNPGEYLAKYCFEPVILCCKPLSPTPTKT

> non-ACP_78

GRPNPVNNKPTPHPRL

> non-ACP_79

GRPNPVNTKPTPYPRL

> non-ACP_80

GRRRRSVQWCAVSQPEATKCFQWQRNMRKVRGPPVSCIKRDSPIQCIQA

> non-ACP_81

GSCSCSGTISPYGLRTCRATKTKPSHPTTKETHPQTLPT

> non-ACP_82

GSKKPVPIIYCNRRTGKCQRM

> non-ACP_83

GSNFCDSKCKLRCSKAGLADRCLKYCGICCEECKCVPSGTYGNKHECPCYRDKKNSKGKSKCP

> non-ACP_84

GSQLVYREWVGHSNVIKGPP

> non-ACP_85

GSVLNCGETCLLGTCYTTGCTCNKYRVCTKD

> non-ACP_86

GTCKAECPTWEGICINKAPCVKCCKAQPEKFTDGHCSKILRRCLCTKPC

> non-ACP_87

GTPGFQTPDARVISRFGFN

> non-ACP_88

GTWDDIGQGIGRVAYWVGKALGNLSDVNQASRINRKKKH

> non-ACP_89

GVFLDALKKFAKGGMNAVLNPK

> non-ACP_90

GVFSFLKTGAKLLGSTLLKMAGKAGAEHLACKATNQC

> non-ACP_91

GVIKSVLKGVAKTVALGML

> non-ACP_92

GVITDALKGAAKTVAAELLRKAHCKLTNSC

> non-ACP_93

GVLDILKGAGKDLLAHALSKISEKV

> non-ACP_94

GVLDILTGAGKDLLAHALSKLSEKV

> non-ACP_95

GVVDILKGAGKDLLAHLVGKISEKV

> non-ACP_96

GWANTLKNVAGGLCKITGAA

> non-ACP_97

HHQELCTKGDDALVTELECIRLRISPETNAAFDNAVQQLNCLNRACAYRKMCATNNLEQAMSVY
FTNEQIKEIHDAATACDPEAHHEHDH

> non-ACP_98

HNKQEGRDHDKSKGHFHRVVIHHKGGKAH

> non-ACP_99

HRHQGPIFDTRPSPFNPNQPRPGPIY

> non-ACP_100

HVDKKVADKVLLLKQLRIMRLLTRL

> non-ACP_101

IFGAILPLALGALKNLIK

> non-ACP_102

IIEKLVNTALGLLSGL

> non-ACP_103

IIGLVSKGTCVLVKTVCKKVLKQG

> non-ACP_104

IKITTMLAKLGKVLAHV

> non-ACP_105

ILENLLARSTNEDREGSIFDTGPIRRPKPRPRPRPEG

> non-ACP_106

ITCQQVTSELGPCVPYLTGQGIP

> non-ACP_107

IYWIADQFGIHLATGTARKLLDAMASGASLGTAFAAILGVTLPAWALAAAGALGATAA

> non-ACP_108

KCKWWNISCDLGNNGHVCTLSHECQVSCN

> non-ACP_109

KLWEAFWAVKDTMQAQDNITSARLLQQEVLQNVSDAESCYLVHTLLEFYLKTVFKNYHNRTVE

> non-ACP_110

KQEGRDHDKSKGHFHMIVIHHKGGQAHHG

> non-ACP_111

KQQLATEAESAGPIL

> non-ACP_112

KRFGRLAKSFLRMRILLPRRKILLAS

> non-ACP_113

KRFHSVGSLIQRHQQMIRDKSEATRHGIRIITRPKLLLAS

> non-ACP_114

KRRGSVTTRYQFLMIHLLRPKKLFA

> non-ACP_115

KRRHWFPLSFQEFLEQLRRFRDQLPFP

> non-ACP_116

KSCCRSTQARNIYNAPRFAGGSRPLCALGSGCKIVDDKKTPPND

> non-ACP_117

LCLDQKPEMEPFRKDAQQALEPSRQRRWLHRRCLSGRGFCRAICSIFEEPVRGNIDCYFGYNCCRRMFSHYRTS

> non-ACP_118

LIDHLGAPRWAVDTILGAIAVGNLASWVLALVPGPGWAVKAGLATAAAIVKHQGKAAAAAW

> non-ACP_119

LLGRCKVKSNRFHGPCLTDTHCSTVCRGEGYKGGDCHGLRRRCMCLC

> non-ACP_120

LPVNEAQCRQVGGYCGLRICNFPSRFLGLCTRNHPCCSRVWV

> non-ACP_121

LQDAALGWGRRCPQCPRCPSCPSCPRCPRCPRCKCNPK

> non-ACP_122

LRVRLASHLRKLRKRLLRDADDLQKRLAVY

> non-ACP_123

LSCKRGTCHFGRCPSHLIKGSCSGG

> non-ACP_124

LTCEIDRSLCLLHCRLKGYLRAYCSQQKVCRCVQ

> non-ACP_125

MDSNKDERAYAQWVIIILHNVGSSPFKIANLGLSWGKLYADGNKDKEV

> non-ACP_126

MHDFWVLWVLLEYIYNSACSVLSATSSVSSRVLNRSLQVKVVKITN

> non-ACP_127

MINRTDCNENSYLEIHNNEGRDTLCFANAGTMPVAIYGVNWVESGNNVVTLQFQRNLSDPRL
ETITLQKWGSWNPGHIHEILSIRIY

> non-ACP_128

MKTFSVAVAVAIVLAFICTQESSALPVTGVEELVELVSSDDPVADHQELPVELGE
RLFNIRKKRASPKCTPYCYPTRDGVFCGVRCDF

> non-ACP_129

MKTFSVAVAVAVVLAFICTQESSALPVTGIEELVEPVSSDNNDNHQGLPVELRERLVNIRKKRAP
TDCIPYCYPTGDGFHCGVTCRF

> non-ACP_130

MLAKIKAMIKKFPNPYTLAAKLTTYEINWYKQQYGRYPWERPVA

> non-ACP_131

MNFNKLFVFVALVLAVCIGQSEAGWLKKIGKKIERVGQHTRDATIQTIGVAQ

> non-ACP_132

MRILYLLFSVLFLVLQVSPGLSLPQRDMFLCRIGSCHFGRCPIHLVRVGSCFGFRSCCKSPWDV

> non-ACP_133

PDEDAINDALNKVCSTGRRQRSICKQLLKK

> non-ACP_134

SKRNTWTPSGSNTKWMVEWSGQNLDSGALGTITVDVLRKGN

> non-ACP_135

SKYGGECSVEHNTCTYLKGGKDHIVSCPSAANLRCKTERHHCEYDEHHKTVDCQTPV

> non-ACP_136

SLQGGAPNFPQPSQQNGGWQVSPDLGRDDKGNTRGQIEIQNKGKDHDFNAGWGKVIRGPNKA
KPTWHVGGTYRR

> non-ACP_137

SLQPGAPNVNNKDQPWQVSPHISRDDSGNTRTDINVQRHGENNDFEAGWSKVVRGPNKAKP
TWHIGGTHRW

> non-ACP_138

TYMPVEEGEYIVNISYADQPKKNSPFTAKKQPGPKVDLSGVKAYGPG

> non-ACP_139

VLLFLFQAAPGSADAPFADTAACRSQGNFCRAGACPPTFAASGSCHGGLLNCCAK

> non-ACP_140

VNYGNGVSCSKTKCSVNWGQAFQERYTAGINSFVSGVASGAGSIGRRP

> non-ACP_141

VQETQKLAKTVGANLEETNKKLAPQIKSAYDDFVKQAQEVQKKLHEAASKQ

> non-ACP_142

VSCTCRRFSCGFGERASGSCTVNGVRHTLCCRR

> non-ACP_143

VTCDILSVEAKGVKLNDAACAAHCLFRGRSGGYCNGKRVCVCR

> non-ACP_144

VTCDLLSFEAKGFAANHSLCAAHCLAIGRRGGSCERGVCICRR

> non-ACP_145

VTCYCRRTRCGFRERLSGACGYRGRIYRLCCR

> non-ACP_146

VTSWSLCTPGCTSPGGGSNCSFCC

> non-ACP_147

WNPFKELERAGQRVRDAIISAGPAVATVAQATALAK
> non-ACP_148
YPSDYNGKTVGPDEKIQINSCGRENASSGTEGSFDIVDPNDGNKTIRHFYWECPWG
> non-ACP_149
YRQSMNNFQGLRSFGCRFGTCTVQKLAHQIYQFTDKDKDNVAPRSKISPQGY
> non-ACP_150
YVPLPNVPQPGRRPFPTFPGQGPFNPKIKWPQGY

None of the peptides in the independent dataset occurs in Supporting Information S1.

Supporting Information S3: The predictive results of iACP and Tyagi et al.'s models based on the same independent dataset given in Supporting Information S2

Peptide ID[a]	Experimental annotations	Predictive results		iACP
		Tyagi et al.'s method		
		Module 1	Module 2	
ACP_1	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_2	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_3	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_4	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_5	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_6	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_7	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_8	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_9	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_10	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_11	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_12	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_13	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_14	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_15	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_16	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_17	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_18	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_19	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_20	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_21	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_22	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_23	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_24	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_25	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_26	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_27	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_28	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_29	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_30	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide

ACP_31	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_32	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_33	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_34	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_35	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_36	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_37	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_38	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_39	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_40	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_41	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_42	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_43	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_44	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_45	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_46	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_47	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_48	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_49	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_50	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_51	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_52	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_53	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_54	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_55	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_56	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_57	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_58	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_59	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_60	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_61	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_62	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_63	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_64	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_65	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_66	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_67	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_68	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_69	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_70	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_71	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_72	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_73	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_74	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_75	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide

ACP_76	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_77	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_78	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_79	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_80	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_81	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_82	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_83	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_84	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_85	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_86	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_87	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_88	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_89	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_90	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_91	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_92	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_93	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_94	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_95	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_96	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_97	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_98	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_99	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_100	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_101	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_102	Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
ACP_103	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_104	Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
ACP_105	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_106	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_107	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_108	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_109	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_110	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_111	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_112	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_113	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_114	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_115	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_116	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_117	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_118	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_119	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_120	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide

ACP_121	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_122	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_123	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_124	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_125	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_126	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_127	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_128	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_129	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_130	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_131	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_132	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_133	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_134	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_135	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_136	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_137	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_138	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_139	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_140	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_141	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_142	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_143	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_144	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_145	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
ACP_146	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_147	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
ACP_148	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_149	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
ACP_150	Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_1	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_2	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_3	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_4	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_5	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_6	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_7	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_8	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_9	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_10	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_11	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_12	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_13	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_14	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_15	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide

non-ACP_16	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_17	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_18	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_19	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_20	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_21	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_22	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_23	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_24	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_25	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_26	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_27	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_28	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_29	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_30	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_31	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_32	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_33	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_34	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_35	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_36	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_37	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_38	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_39	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_40	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_41	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_42	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_43	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_44	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_45	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_46	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_47	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_48	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_49	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_50	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_51	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_52	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_53	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_54	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_55	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_56	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_57	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_58	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_59	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_60	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide

non-ACP_61	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_62	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_63	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_64	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_65	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_66	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_67	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_68	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_69	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_70	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_71	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_72	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_73	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_74	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_75	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_76	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_77	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_78	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_79	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_80	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_81	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_82	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_83	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_84	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
non-ACP_85	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_86	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_87	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_88	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
non-ACP_89	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_90	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_91	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_92	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_93	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_94	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_95	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_96	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_97	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_98	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_99	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_100	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_101	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_102	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_103	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_104	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_105	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide

non-ACP_106	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_107	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_108	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_109	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_110	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_111	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_112	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_113	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_114	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_115	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_116	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_117	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_118	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_119	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_120	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_121	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_122	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_123	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_124	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_125	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_126	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_127	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_128	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_129	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_130	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_131	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
non-ACP_132	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_133	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_134	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_135	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_136	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_137	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_138	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_139	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_140	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_141	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Anticancer peptide
non-ACP_142	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_143	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_144	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Anticancer peptide
non-ACP_145	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_146	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide
non-ACP_147	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_148	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_149	non-Anticancer peptide	Anticancer peptide	Non-Anticancer peptide	Non-Anticancer peptide
non-ACP_150	non-Anticancer peptide	Anticancer peptide	Anticancer peptide	Non-Anticancer peptide

[a]Peptide ID is in accordance with the sequence ID in the independent dataset provided in Supporting Information S2.

Supporting Information S4: List of the 126 optimal one-gap dipeptides and their *F-scores*

Dipeptide	F-score	Dipeptide	F-score	Dipeptide	F-score	Dipeptide	F-score	Dipeptide	F-score
AK	38.03	CN	16.30	LP	8.93	EL	6.19	NV	4.61
KC	34.43	AR	15.79	VL	8.59	EQ	6.19	YP	4.47
EC	34.14	CS	15.32	VG	8.56	PK	6.10	MI	4.45
CE	34.02	FI	14.96	EP	8.31	PN	6.08	HV	4.43
IK	31.22	GR	14.79	QE	7.93	LN	6.07	IY	4.41
KF	30.09	CK	14.75	VI	7.89	DM	6.06	VN	4.41
PI	28.37	PP	14.04	AL	7.84	RQ	5.91	FV	4.30
KI	28.01	GS	13.78	LE	7.80	NS	5.83	YC	4.28
LL	27.60	YN	13.75	QP	7.62	CI	5.81	NR	4.22
VY	27.37	AA	13.65	RT	7.58	EN	5.78	WQ	4.17
IC	27.16	CW	13.00	AQ	7.58	SC	5.62	RS	4.14
CC	26.86	QQ	12.99	ES	7.52	NL	5.48	MV	4.11
SK	25.78	CT	12.83	IA	7.49	ND	5.45	CL	4.08
KK	25.58	LR	12.80	LA	7.42	SI	5.43	LF	4.03
FK	22.53	QS	12.66	PC	7.41	WP	5.43	QT	4.01
IG	20.92	IS	12.56	PQ	7.15	EA	5.42	EE	4.01
GF	20.88	KV	12.50	AE	7.01	VM	5.29	GV	3.90
GI	20.75	QR	11.10	LV	6.98	QK	5.15	RM	3.88
KA	19.65	SY	10.61	MA	6.97	PD	4.92		
VK	19.55	FG	10.36	DQ	6.95	GL	4.89		
SV	19.37	TQ	10.01	AM	6.88	QV	4.83		
AP	18.56	RR	9.98	CR	6.82	SR	4.83		
LK	18.10	CF	9.86	AH	6.70	ER	4.83		
KL	18.04	FP	9.70	SQ	6.46	TE	4.81		
RA	17.34	WK	9.42	PT	6.43	QL	4.76		
RL	17.17	FC	9.15	TP	6.39	GD	4.74		
LQ	17.15	PA	9.07	RD	6.29	DD	4.70		