## **Extended Data**

Table 1: The sequence of IL-2β mimics

β agonist	Amino Acid Sequence			
В0	MEEKLEELKKKLAELDGKYIYEKCYGTEEEAKKALEELKAALEELAKAEKEAAAAAA			
B1	SEEERRREEEERRKEERLEKMRERDEEIREEEEEEEEEEEEEEEEEE			
B2	SLEEALRAELRRAAEECGALLREAERAAAAFRAATPSEEEAAAFLEAARAEARAACEARFAAL			
В3	EELEKKLKELKEKAEEAREKAKEYSAKAVKYLADPSKKEEAEECLKKCEELIKEERKYIEEAKKL			
B4	MLEELELKKKLKEKLEKEEEERKKRWEARREEAKAAALAARKAEEEARAAAEAAAAA			
B5	AEELARRAAEFLARAKELDLEMAKKIEEVRKKTGNEEETEKARKELLEELRKEIKRLKEEL			
В6	EEEERKKKIEEYKTKAEAHKLDAEQLEAKAAAASPEAAKLYKKLAEKEKELAAEYEKKAKELEEA			
В7	SLLEELKRKLECEKRANECSEKLKKKREEEKEKKKKLEEEEEKLEEEEEELEEEEEEE			
В8	SLEKILEELKKKEEEKKLEESLKKLEEEAKKFEEERKAAAEAAAKAAAE			
В9	ELEEKAKKEAKEKEREERSKRLREERERRLEEEERRRREEEERRRREEEEA			
B10	SLEELLKRLRELKREECLARMRAKAEEERAAEAAAAAAAAAAEELARRLAELA			
B11	SLAAEKAAKIAALTAEAEKKAKELLAKAAAASPEERKKYMEEAEKYLAEIRAEIAAIL			
B12	SLEELLKELEEKKKKEEEEKLKKAKENWEKYQKELAERLAAALAALAAAAAAALAAALAEAAAAA			
B13	SELKELEEKRKEEEEKLKEETEKRLAEEERRFLEERARREAERRAEEERRRREELERRR			
B14	MSERIKTLREALELVRQGVENPATQAELIARGRALAEAATGEAGRALFERELARLEAQKAA			
B15	EEEVKALLEELAKLEYEYLKAAKEDKKLAEEYLKKAEEAEKKLLEAKKALEEKKAKE			
B16	EEEERKAAEEAARKAAHLKEATERFRERRRRREEEEREREEEEERREEEEEREREE			
B17	AAAAAAREAALKARRAAGDEDAARDRAACEALYAEDPAKGAECLAKVEAEEKAFRAEIDAALAA			
B18	SLEEELRREEEERREEEERLEELWKKNKEKAEELAKKREKELEEKEEKERKEKLEELKKELE			
B19	MSEEELKKLLEEQKKKIEQLRKEGEAKAAALRAAARAAAAAAAAAAA			
B20	MTLEEKLANLQAGKAASLAALEALAAEAAAESPEKAALVRELARRVRAQYDKEIAAVAAELA			
B21	EEKEKEEKKKKEEEEKKKKEREEKEKEYIEKVKKEVKEREEKEKAEEEAKKKA			
B22	SLEEVKATYEESIEAAKKLGAERVAKAAAEGPEAAEKAAALSKEAIELLEKKKEEELAKL			
B23	MEEKEKKEKEKEELKKKAEEAEKKAKELKEKMAKSSAEEAEKLAKEREELEKKRVELKKELE			
B24	SLAAELAKKKEREKALEERKKKAEEIKEEEEERKRKAAEAAAAAAAAAAAAAAAAA			
B25 AALAALLAALAAAAAAAAAAAAAAAAAAAEAEKRAAELRRRREEELARRLAA				
B26	SLEEEKKRKEEEEKRKKRLEEARREWEERLEARRRAEEEERLEEERRR			
B27	SLLEELRRALEEREELERELEEAKKRYEEALKKLKEEKEKEEEERKRKEEE			
B28	MEEERKEEERKREEEKERERRAAGRAAREAAAAAAAAAAAA			
B29	SAAAKAELAALEKRAKEAAALAEEAAKKDKKKAKRYKADRDILEKEAKALKAAL			
B30	AAAAEAAAAAAALRARQAEREARAREMAAAIAAADGEEGKRKAALLLHYAAVVRARVEAEVAA			
B31	SEEERERAEAAARAAAEAARAAARAKAKERYKEELEEIKKKREEEEKKKKEEELK			
B32	SLEALAAAAAAAAAAAAAAAAAAAALEEEYRKRLEEEAEELEEELEEEEEEEEELE			
B33	AEEEERERAEAAAAAAAEAEARLARMRAEDERIRAAKREAAARAAAEAAAAEERRRAE			
B34	AAEAARRAARAAFDARLTAAERKYLAAQDDPEAAAAWLAEIAAIEAERTAAERAWAA			
B35	AAAAAAAEIAEAARKAEERYKELEKEAEEALKKDKEEGTKKRKEALEESLKLAKELLELRKRLEA			
B36	SLAEALAAAAAAAAAAAAARRARIEADIAEARRRLEEEEREKEEEEKR			
В37	SLLEELLRRLREEEEERRREKSREEGRRRREAERAALAAAAEAAAAEAAAREAAEREAA			
B38	EEEKRKAELLKQIEEDLKKAEEALALGAATPKHDYYEGLAKSYLARAEELKAILK			
B39	EEERREENRKRRKERAEKEIKESKEEEEARRRKEEEEERRRREEER			
B40	EEEEKRRLEEERERAKREAEERAERIKAEIEAERARRAALEALRRELEEL			
B41	EEEKREKELKELQEEAERLAKELLEHALPKLLAALLAAAAALAAAALLAALA			
B42	SLLDALLEALFRALVTAHFQAAAAATDRETAVEQARAFAAALRAALAAAAAAAAAAAAAAAAA			
B43	SELEEELRRLEELEESRRQDEEARRRIREREAEEEARKRLEELLRKLLES			

B45 AAIRAI FAFEAACRAAI AAIIAATRA APRA FERNACIYLELKKA KENEENKEKY LELAKKLIKEELEK B45 AAIRAI FAFEAACRAAI AAIIAATRA APRA FERIAAITAI WEYACAARRAAVI.A B46 AAIEALIAAADAEIAELRA AGVAEARAAPEERERRAVILETORRA ELEKAAARAAAAAAAA B47 FEFERRRI EEFRRAFIERRI AFAEREREEL RREFEEREREEL EREI REFERREREA B48 ELEEKKKI LEERKKA ELEKSKELICHKIKSKEREEKKREEEEEREELEELEELEELEELEELEE B59 SLI-ELIERIAAA KAFAARKAARAI LAGGAAIKAATIAAAAARAEFERREREEREREELEELEELEELEELEE B50 AAAAEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		
B46 AAGIEALLAAADAEIAELRAAGVAEARAAPREERRAIVETDRRALELRAAARAAAALAAALA B47 EEEERRRI EEERRAI EERRI AEAFEREEEELRREFEERREFELRREFEERRERA B48 EEEEKKKLEEEKKKAEKSKELIEKKKEREEELRREFEERREFELREFEERRERA B49 SILEELRIJAAKAAFAARAAARAARAAALAAAAAAAAAAAAAAAAAAAA	B44	SKEEEEKLKKEKRKEELEKRLKEAEEIWKKYIELLKKAKENEENKEKYLEEAKKLKEELEK
B47 EEEERRILEEERRA ELERRILEERKREEELRREEEEREEEEEEEEEEEEEEEEE	B45	AALREALEAEEAACRAALAALIAATRAAPRAERIAALTALVKECAARRAAVLA
B48 SILEELERIKAGEKSKELIEKRKKEREGEKRRREEEEEEEEEEEEEEEEEEEEEEEEE	B46	AAEIEALLAAADAEIAELRAAGVAEARAAPREERPAIVLETDRRALELRAAARAAAAAAAAAAA
SILEELERLAAKAAAAAAAAAAAAAABEAAARARAARAARAAAAAAAAAA	B47	EEEERRRLEEERRAELERRLAEAEREREEELRRREEEEREREELERELREEEERRRREA
B50 AAAAFAAAAAAAAAAAAAAAAAAAAAAAABB B51 EEERRROJEALKEAAAAAAAFYEYALAKELAAKDPAYAPLAEALKAELERLKAELAALEAA B52 SLEDIEKKIAELKRALKAEFESCKIAEERLKADPAYAPLAEALKAELERLKAELAALEAA B53 PLIAALRELADRLIIREAWERERRAREAERAARAAAAAAAAAAAAAA B54 MSPEQKELQAQRDKYDDEALKINELALKDPEKAEEYNAQAKKYIEKAYEIRKQIEA B55 MEAWKKLEAKGEEYFALGKANPEKREEYERLOKLYFESAKLAKERLEKAKAEKLA B56 EEEEEELRRLEEEREELEKRREERIAARAAAEAAAAAAAAAAAAAAAAAAAAAAAAA	B48	EEEEKRKLEEERKKAEEKSKELIEKRKKEREERKRRREEEEEEEEEEEEEEEEELEEELEE
B51 EEERRRQIEALKRAAAAAEYEYALAKELAAKDPAYAPLAEALKAELERLKAELAALEA B52 SLEDIEKKIAELKREKLEFEESCKKIAEERLKKOPEKGKKHKEELEKLNEELRKKVEAEIAELLA B53 PLLAALRELADRLHREAVRERERARRAEARAAAAAAAAAAAAAAAAAAAAAAA	B49	SLLEELERLAAKAAEAARKAARLAAGEAALKARLAAEAAAREAEEERRRREEE
B52 SLEDIEKKIAELKRRIKLFEESCKKIAEERLKKDPEKGKKHKEELEKLNEELRKKVEAEIAELLA B53 PILAALRELADRI.HEEAVRERERARRAARAAAAAAAAAAAAAAAAAAAAAAAA	B50	AAAAEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B53 PLLAALRELADRLHREAVRERERARREAERAARAAAAAAAAAAAAAAAAAAAA	B51	EEERRRQIEALKRAAAAAEYEYALAKELAAKDPAYAPLAEALKAELERLKAELAALEAA
B54 MSPEÇKELQAQRDKYDDEALKI.NELALKDPEKA EEYNAQAKKYJEKAYEIRKQIEA B55 MEAVKKLEAKGEEYFALGKANPEKREEYERLGKIJYFESAKLAKERLEKAKAEKLA B56 EEEEEEELRRLEERERELEKRREERIJARAAEEAARAAAAAAAAAAAAAAAAAAAAAAAA	B52	SLEDIEKKIAELKRRLKLFEESCKKIAEERLKKDPEKGKKHKEELEKLNEELRKKVEAEIAELLA
B55 MEAYKKLEAKGEEYFALGKANPEKREEYERLGKLYFESAKLAKERLEKAKAEKLA B56 EEEEEEERLREEEREREKREERIARAAAAAAAAAAAAAAAAAAAAAAAA	B53	PLLAALRELADRLHREAVRERERARREAERAARAAAAAAAAAAAAAAAAAAAA
B56 EEEEEELRRLEEERELEKRREERIAARAAEAAAAAAAAAAAAAAAAAAAAAAAAAA	B54	MSPEQKELQAQRDKYDDEALKLNELALKDPEKAEEYNAQAKKYIEKAYEIRKQIEA
B57 AEEERREEEERRREEEERRREEEERRRRIEEATKERREKLKKEKEEKKKEEEKKEE B58 ALLEALRAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B55	MEAVKKLEAKGEEYFALGKANPEKREEYERLGKLYFESAKLAKERLEKAKAEKLA
B58 ALLEALREAAAAEAARLAALEAENRAKYAALTAALKALCAALAELA B59 SLEALKALLEALKALVEKAKKEAEEEKKKAEEKKKEEEEKKK B60 EEEAARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B56	EEEEEELRRLEEEREELEKRREERIAARAAEEAARRAAAAAAAAAAAAAAAAAAAAA
B59 SLLEALKALLEALKALVEKAKKEAEEEKKKAEEEKKKEEEEKAKKELEELK B60 EEEAARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B57	AEEERREEEERRREEEERRREEEERLEEERRRIEEATKERREKLKKEKEEEEKKEKE
B60 EEFAARAAAAAAAAAAAAAAAAAAAAAAAAAAABABAREAERRERERKAEKERKELEEELRKK B61 SEEEERRREEEERRRREEEERRRSEEAGAEARARKAELERRELEELLREL B62 EEEERERREEEERERKEKLRREDEEIMEKLREERRREEERREREELERLR B63 EEEEELERERERRAAEEAAAAAAAAAAAAAAAAAAAAAA	B58	ALLEALREAAAAEAARLAALEAENRAKYAALTAALKALCAALAELA
B61 SEEEERRREEEEERRRRSEEAGAEARAREKAELERRELEELLREL B62 EEEERERERREEEERERKEKRREDEEIMEKLREERREEERERREELERLR B63 EEEEELERERRRAAEEAAAFRAEAAARAAARAAAAAAAAAA	B59	SLLEALKALLEALKALVEKAKKEAEEEKKKAEEKKKKEEEEKAKKELEELK
B62 EEEEREREREEEERERLEKLRREDEEIMEKLREERREEERREREELERLR B63 EEEEELERERRRAAEEAAAFRAEAAARAAAAAAAAAAAAA	B60	EEEAARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B63 EEEEELERERERRAAEEAAAFRAEAAARRAALEAARAAAAAAAAAA	B61	SEEEERRRREEEEERRRRSEEAGAEARAREKAELERRELEELLREL
B64 SEELRRLEELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B62	EEEEREREREEERLEKLRREDEEIMEKLREERRREEERREREELERLR
B65 KELEEEKAKREKEREKLLAEAKAEGEKRLKAEEEARRREEEEERE B66 SEERREEEEERARRAAEHREAVRRRAREELERRRAAAAAAAAAAAAAAAAAAAAAAAA	B63	EEEEEELERERRRAAEEAAAFRAEAAARRAALEAARAAAAAAAAAA
B66 SEERREEEEERARRAAEHREAVRRRAREELERRRAAAAAAAAAAAAAAAAABB67 LPLLLLLLLLAALLAALAALAALAACAQAAREKKLREESEKYYEELRKKKEEERKEEEE B68 SEKEALIAALKEKAAKALAELEEKAKEDPEAAAAAAAAAAAAAAAAAAAAAAAAAAB B69 KEKEEEKKKEKEKAEEEERKRKAEELKARAAALAAERAAAAAAAAAA	B64	SEELRRRLEELAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B67 LPLLLLLLLALALLAALLAALLAALAAAAAAAAAAAAA	B65	KELEEEKAKREKEREKLLAEAKAEGEKRLKAEEEARRREEEEERE
B68 SEKEALIAALKEKAAKALAELEEKAKEDPEAAAAAAAALKAATERLVARIKA B69 KEKEEEEKKKEKAEEEERKRKAEELKARAAALAAERAAAAAAAAAA	B66	SEEEREREEEERARRAAEHREAVRRRAREELERRRAAAAAAAAAAAAAAAAAAA
B69 KEKEEEEKKKEKAEEEERKRKAEELKARAAALAAERAAAAAAAAAA	B67	LPLLLLLLLLALALLAALLAALAEAQAAREKKLREESEKYYEELRKKKEEEERRKEEEE
B70 SAAELAAAAAEAAARAKALAEAMRAEEEAEREREAEEEARRRREEEERLR B71 SLLAALAALLAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B68	SEKEALIAALKEKAAKALAELEEKAKEDPEAAAAAAAALKAATERLVARIKA
B71 SLLAALAALLAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B69	KEKEEEEKKKEKAEEEERKRKAEELKARAAALAAERAAAAAAAAAA
B72 SLEELLEERRRAAEEERRRRREDIEEAREALKRAEERKKKAE B73 SPADALWEAELAAIREAVVAVGAEASKLSPEEAARRWAAATAEAAARMAAAKARRDALLAAA B74 MEEEEKKKEEEKAKKEKEKEIEEIKKKGLESAKKSAAEASLAASLAYCLAAAAAAA B75 EEELERRREEAERRIAELGRACLRAPEAERPACRAALRAEDRRLREELRREEEAR B76 SLEELLRALAAAAEAAEAARREAEARARGAALRAEREARRAEEERRAEEEAARBAAAAAAAAAAAAAAA	B70	SAAELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B73 SPADALWEAELAAIREAVVAVGAEASKLSPEEAARRWAAATAEAAARMAAAKARRDALLAAA B74 MEEEEKKKEEEKAKKEKEEIEIKKKGLESAKKSAAEASLAASLAYCLAAAAAAA B75 EEELERRREAERRIAELGRACLRAPEAERPACRAALRAEDRRLREELRREEEAR B76 SLEELLRALAAAAAEAAEAARREAEARARGAALRAEREARRAEEERRRAEEEAARRAEEEAA B77 AALAAALAALAAAAAAAAAAAAAAAAAAAAAAAABEGEARLAAHRAEYEALLAARAAEAAAA B78 DAHLARARAEAAALAAELAAAGKAACGAAAAAALLAAKALAAANAAAAAA B79 AELEEKAAKAAAEEAAKAALEAELKKKSEEFAKKREEKKEEEEKK B80 EEELQEYRERLQALAEEAAKKGWSPEEVKEAAKKLQEELEQERKER B81 MEEKKKKEEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK B82 SEEERRRLAEELAAQRAREEALKRESEALAEARRRLRELAAALAALLAELA B83 AEEAEAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B71	SLLAALAALLAAAAAAAAAAAAAAAAGEARSRALHEEKQKKVLEEKLEEEKEKLEEELEKLLE
B74 MEEEEKKKEEEKAKKEKEIEEIKKKGLESAKKSAAEASLAASLAYCLAAAAAAA B75 EEELERRREEAERRIAELGRACLRAPEAERPACRAALRAEDRRLREELRREEEAR B76 SLEELLRALAAAAAEAAEAARAEAARRAEAEARARGAALRAEREARRAEEERRRAEEEAARRAEEAA B77 AALAAALAALAAAAAAAAAAAAAAAAAAAAAAAAAA	B72	SLEELLEEERRRAAEEEERERRREDIEEAREEALKRAEERKKKAE
B75 EEELERREEAERRIAELGRACLRAPEAERPACRAALRAEDRRLREELRREEAR B76 SLEELLRALAAAAAEAARRAEAARRAEAARRAGAALRAEREARRAEEERRAEEEAARRAEEAA B77 AALAAALAALAAAAAAAAAAAAAAAAAAAAAAAAAA	B73	SPADALWEAELAAIREAVVAVGAEASKLSPEEAARRWAAATAEAAARMAAAKARRDALLAAA
B76 SLEELLRALAAAAAEAAEAARREAEARARGAALRAEREARRAEEERRRAEEEAARRAEEEAA B77 AALAAALAALAAAAAAAAAAAAAAAAAAAAAAAAAA	B74	MEEEEEKKKEEEKAKKEKEIEEIKKKGLESAKKSAAEASLAASLAYCLAAAAAAA
B77 AALAAALAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B75	EEELERRREEAERRIAELGRACLRAPEAERPACRAALRAEDRRLREELRREEEAR
B78 DAHLARARAEAAALAAELAAAGKAACGAAAAAALLAAAKALAAANAAAAAA B79 AELEEKAAKAAAEEAAKKAAALEAELKKKSEEFAKKREEKKKEEEEKK B80 EEELQEYRERLQALAEEAAKKGWSPEEVKEAAKKLQEELEQERKER B81 MEEEKKKKEEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK B82 SEEERRRLAEELAAQRAREEALKRESEALAEARRLRELAAALAALLAELA B83 AEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B76	SLEELLRALAAAAAEAAEAARREAEARARGAALRAEREARRAEEERRRAEEEAARRAEEEAA
B79 AELEEKAAKAAAEEAAKAAALEAELKKKSEEFAKKRREEKKKEEEEKK B80 EEELQEYRERLQALAEEAAKKGWSPEEVKEAAKKLQEELEQERKER B81 MEEEKKKKEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK B82 SEEERRRLAEELAAQRAREEALKRESEALAEARRRLRELAAALAALLAELA B83 AEEAARAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B77	AALAAALAALAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B80 EEELQEYRERLQALAEEAAKKGWSPEEVKEAAKKLQEELEQERKER B81 MEEEKKKKEEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK B82 SEEEERRRLAEELAAQRAREEALKRESEALAEARRLRELAAALAALLAELA B83 AEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B78	DAHLARARAEAAALAAELAAAGKAACGAAAAAALLAAAKALAAANAAAAAA
B81 MEEKKKKEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK B82 SEEEERRRRLAEELAAQRAREEALKRESEALAEARRLRELAAALAALLAELA B83 AEEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B79	AELEEKAAKAAAEEAAKAAALEAELKKKSEEFAKKRREEKKKEEEEKK
B82 SEEERRRLAEELAAQRAREEALKRESEALAEARRLRELAAALAALLAELA B83 AEEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRLLEELERRRLEEMEREREEAEARAAAQLAAEAAALA B85 MAEEAAAAAAAALRAEAAAAEAAWAEERRAAAARERRAEAERRRREEELLE B86 EEEEERRRREEEARREAELRAWRERIERETAELRARNEEERRRREEEEERRRRE B87 GLAALAAEALRALEAEFARDRARLERLRDHYAGDPEKAARVDAALARLEAQRAEALA B88 SLLAALAELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B80	EEELQEYRERLQALAEEAAKKGWSPEEVKEAAKKLQEELEQERKER
B83 AEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA B84 SLLEELLRRLLEELERRRRLEEMEREREEAEARAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B81	MEEEKKKKEEEEKKRLEELKKEIAKATDEAERAKKNASDPANKAKMAEAKAKKEAAEKELK
B84 SLLEELLRRLLEELERRRRLEEMEREREAEARAAAQLAAEAAALA B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B82	SEEEERRRLAEELAAQRAREEALKRESEALAEARRRLRELAAALAALLAELA
B85 MAEEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B83	AEEEAERAAVEREIKAKTNELDAKCTAAANEVAKTEGPEAAEKVRAECEAQRAAEAAAIRAAA
B86 EEEEERRREEEARREAELRAWRERIERETAELRARNEEERRRREEEEERRRRE B87 GLAALAAEALRRALEAEFARDRARLERLRDHYAGDPEKAARVDAALARLEAQRAEALA B88 SLLAALAELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B84	SLLEELLRRLLEELERRRLEEMEREREEAEARAAAQLAAEAAALA
B87 GLAALAAEALRRALEAEFARDRARLERLRDHYAGDPEKAARVDAALARLEAQRAEALA B88 SLLAALAELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B85	MAEEAAAAAAAAAAREAAAAAEAAWAEERRAAAARERERAEAERRRREEELLE
B88 SLLAALAELAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	B86	EEEEERRRREEEARREAELRAWRERIERETAELRARNEEERRRREEEEERRRRE
B89 SLEELLEEARRAAEELERLRREREEEDERERELLRERREEEERR B90 AAKEAEEARLARANAIYAAARAARAARAAAAAAAAAAAAAAAAAAAAAAA	B87	GLAALAAEALRRALEAEFARDRARLERLRDHYAGDPEKAARVDAALARLEAQRAEALA
B90 AAKEAEEARLARANAIYAAARAARAAREAAAAAAAAAAAAAAAAAAAAAAAAA	B88	SLLAALAELAAAAAAAAAAAEALRKAVREAAEEERKRRREEEEREREEERERE
	B89	SLEELLEELLEEARRAAEELERLRREREEEDERERERLLRERREEEERR
B91 AEAALAEAAAAAAAAAAAEEERRRRAAEDIERAKKEREEEKREKEEEEERKRR	B90	AAKEAEEARLARANAIYAAARAARAAREAAAAAAAAAAAAAAAAAAAAAAAAAA
	B91	AEAALAEAAAAAAAAAAAEEERRRRAAEDIERAKKEREEEKREKEEEEERKRR

B92	NEEKLKELEEKAKEYKAKYEAAKAKAAEEKANGSPEEAAAWQREANLYLGKYLVAEKKAKELKEK
B93	SREELEREAREAAEAARRAAEEARRAALGAAIEAARAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
B94	EEEEEELRREEEAEEEERREEEERRRLLEERLREGEEEVEREREEEELREREEELEELERR
B95	SLKEEAERLKEEEENLRKAAEAYEAAGNKEKAKEAKEKAEEAKKKAEEAKKKLEEA
B96	EEEEEEERRREEAERRAREEALREERRRSEEEARRRREERRREE
B97	EEEEEEERRRREEEERKEKEREEAEKEAKELREKADAEEAARAAAREAAAAAAEELRRALE
B98	VKEKAEKEIEELLKEARAVLKEAAATAAAADPATAAAARAEAAKRLAELAKKIREVKKKMKEELA
B99	EAEELAAAALAAAAAAAAAAAAAAARREAIDAAARAAREAAAAAAAAAAA

Table 2: The sequence of IL-2γ mimics

γ agonist	Amino Acid Sequence
G0	ALEEEERRKAEEEAWLAEVKAKRAELTAAAEAARAAGDSEAADAAREKIRALVEEAIKRDRE
G1	AAAEAAAREAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
G2	EEEEKEFEEIRKKTQEMQEKIRELQRLEWEAKKNGSKEKAEELRKKREEVLKELEELRKKRS
G3	DELEKEIEETEELLKKAKEEQAKTGKTEEYGKLIAELQARLEELKAALAAAKAAEAAA
G4	AEVERKVAELKALNAECAARIAAAAAEGPEAAAAAERECNEELRRLVE
G5	MTDKEKLMKELKAKAEEYKAAAAAAAAAGGDPECVATQQARADKYNELLAKLEAS
G6	EEKKREEERKEIQEYVEIADKAGKGEEFLKLLSENKESKEKAKKLAEEMKKKLKEEEEKKKKA
G7	STVEELEANIAANRAAAALTAAAFPETAAAARAEAAAREARNQALIAKEKA
G8	EEEERAKKLEEELKELEKLVEKIKEEGKKDPKAAELAEKLKKELEKLKAE
G9	SAAAKEAAKALATALRLAGTRLFTAGAVAAKIDPAAGAALFAAGAAAFAAAAALEKALA
G10	DAVAAALAEVTAQCRAIVAASEDPEAALAEATALATAFFAQFVGPEEARRLGEEHARAVLAEV
G11	AAAALAELAAAAAEAAEAAALAARRAARAAALAERERRREEEERRREEERR
G12	ELEEEEEERRRFEEEARRREEKRREREERLRERIRRELEEELRRLLE
G13	LEAELKALLAELTALAAAAAAAAAAAAAAGDAELAAIWKAQAAKLNALAAKVAAALA
G14	STLALARALRAIGRAVAAALFGLGYAALKAGNVALAALLYALGAAVLAATTAAIRALLAAA
G15	SAKLKEEYEKAKAEAEKAKALAKEAAAKHPEAGKAYQKYADRLEKLAKAIEKQI
G16	MSLAEAIRDAGVAAALASGDPAHLDAAKAAIAAAVSPEEAARWAAVLDEDYARARAAAA
G17	MIEQLENATKLAKEIYEKLKKTGTPEEAKLAKEIYEKYKEKLEEAKAKKEKEEALKKLLEEL
G18	LLLLLLALLALAALAAAKVAAMRARRAAAAAAAAAAAAAAAAAAAAAAAAAAAA
G19	SLAEAAALAAARAAREARAREREARLEAEREARREEEKEEERRRELE
G20	SKQEALAKARELYEKARELIREGKFEEAEKLIEELEKTEQGKALAKALREELKKEKELLK
G21	LLEELELKAKEEEAKKEYEERKKEREEEEEEEEEEEEEEEEEEEEEE
G22	EKLKKLQELADKAKKREELAKARAAEAKAKGDAAVAAECEATAAKYKETAENLQKEIEKLK
G23	MTPEELAALRAAAIAANKARLAAEEARRAAREAAALLAEAAAALAAALAEALAA
G24	ALEELRRAAEELIREIRENGEPSKETKERLIAAARRLREELGEEGARVVEELDREIERAYEEFKA
G25	KEEEEEAEKKREELLAKLKELAERNKKLAKEGIAPEEAKKIAEELEKKRKELE
G26	SREEEMERLEEEAKREVEEALRTEGIEAAKAVAERLAAEFEALGYLRVARRVRNYAESLILKAK
G27	MKEKAEKIKKEAIALAKEKGEELAKKVEAANPAEQYRMLKKLKKEKAEEK
G28	GLLLALLILLALLRAAAIAAKGAAARAAAAAAAAAAAAAAAAAAA
G29	SEEERREREEKLREEEERKAKLKAEGKAKREALKKAGEEYKKEREEKKEEEERKKKEEEE
G30	SDADRCAAAAARLRARAAQTEALAAQGLSPECRAAAAAAEAARLRALAAELEARRAA
G31	LEEVIDVITRITDAIAQALIAANPVVGGAIAAAIRAAVSAALLALIK

G22 EEEERRKEELRAIAALEAAARALGAANGATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		
G34 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G32	EKEKAILKQEAERAKKRAAGYNALAAEQAANGNTAAAAAAKAKAAALKAKAAEYEEKAK
G15 AAGEEAGRIRRAAAGIAERIARAAAILAAIRAARAAAAAAAAAAAAAAAAAAAAA	G33	EEEEERRKREEELRARIAALEAEAAAARALGAAIPALAAAAEGAAEAARRQAARIREYLAR
G16 G17 G17 G18 G18 G18 G19 MTPGERARALLEAALAHTOARLAELKARTAESPEYAABABAAAARLARLOAALAA G18 G18 G18 MTPGERARALLEAALAHTOARLAELKARTAESPEYAABABAAAARLARLOAALAA G18 G19 MERERFERRRAFEFAERAARAARIELEKLAARKKEKELLEKEKK G19 MERERFERRRAFEFAERARRAARIELEKLAARKKEREKLILERIEFLEKKELE G19 SVEKEHFEARERKETELESAGISSTER HERELAARKKEREKLILERIEKELE ELKKELE G10 SVEKEHFEARERKETELESAGISSTER HERELTERKABERREKULEKILEKE G11 SLEEVKOBABARIARLABAARITAGAARTICAASSPEECAEORAIVFAREARIKALVE G12 VILEBAVALAKKIRDDLAAQLAKAKAAAADTPEMEKALAAETOALLELATKOLEKABAKK G13 SLEELLEKELEELKKELLEALAALALALARAAAAAAAAAAA	G34	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
G37 MTPEERARALLEAALAHTQARLAELKARTAESPEYAAEABAAAARLARLOAALAA G38 DKLEKELAETTAEAEALAAAAAAAAABAEDEKAKEYAHRLAVAQRRRDNIEKELEKKK G39 MERGREGERRRAEELAEARARAABRILEEKLAARKKEREKLLKERLEKELEELKKELE G40 SVEALEEAIKEKETEELSAGLSSTERAERIEETRKRAEERIREVIEKKKE G41 SLEVEVQEAEABHARLRAEARRCAASSPECCAGORAVEAREARIKALVE G42 YLEEAVAALKKIRDDLAAQLAKAKAASSPECCAGORAVEAREARIKALVE G43 SLEELLKELEELKKKLLEALAALALAIRRAANQAPPELREKLLALADALKKLYISLLK G44 SLAEALRALAAAAGKALGNIAAGAAFLKALAAAAAAAAAAA G45 MTEEKEEREKKEAAKREAERALAELARLAAAAAAAAAAAA G46 SABAKLVEKMREVYREYVRELAAKGGEBAKKVEERMEKILKKLKEREKVIKEKEEK G47 ELEKKEEBELKKKAABRAAAAALAYALAKALAELLEALAAAAAAAAAA G48 EEBEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G49 ELIALAARLABAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G35	AAEEEAERLRRAAAELAERLARAALLAALRAALAARLAANALKIAAAAAAAAAAAAAAA
G38 DKLEKELAETTAE AEALAAAAKAAAEDPEKAKEYAHRI AVAORRRDNIEKELEKKK G39 MEREREEERRRAEEEAERARRAAERLEEKLAARKKEREKLI KERLEKELEKKELE G40 SVERAHERAIKEIKETEELSAGI.SSTERA AERHETRIKRAEERIREVIEKKEKE G41 SLEEVKQEAEARIARLRAEAERICAASSPEECAEQRAIVEAREARIKALVE G42 YLEEAVAALKKERDOLAAQLAKAKAAADTPEMKALAAETQALLELATKQLEKAEAKIK G43 SLEELIKELEEKKKLIEALAALALAALAARAAAAAAAAA G44 SLEELIKELEEKKKLIEALAALALALAARAAAAAAAAAA G45 MTEEEKEREEKKKEAAKREAERALAELAELAALAAAAAAAAAA	G36	EEEELERELERLREERERFKEEEEKRRAALEAEAAARRAAAERAAEEARRLAE
G39 MEREREFERRA AFELAFRARA AFRI LEKI. AARKKEREKILKERLEKELEELKKELE G40 SVKEAIEEAIKEIKETEELSAGLSSTERAERIETRKRAEERIRE VIEKKKKE G41 SLEEVKQEABARIAKIRAEABRICAASSPEECA GORAIVEAREARIKALVE G42 YLEEAVAALKKIRDDLAAQLAKAKAAADTPEMKALAAETQALLELATKQI EKAEAKI K G43 SLEELLKELEELKKKILEALAALALARAAADTPEMKALAAETQALLELATKQI EKAEAKI K G44 SLAEALRALAAAAGKALGNINAGAAFIKALLAALAAAAAAAAAAA G45 MITEFEKEREEKKKKLEALARALAALARIAAAAAAAAAAAAA G46 SEAEKIVEKMREVRKEYRELAAKKGEFEAKKVKEEMEKELKI KEEREKVIKEKEEK G47 ELEKKEEELKKKKAEERAAKAALAUYALAKALAELLEALAKALA G48 EEERAARKKLQEEVEKLEKETKERVKELEEAKKSTPEEAEKYKKEAEEVVEETVKKIEEICKS G49 LLALAARLAELAARRAAIEARRAAZUAARAAAAAAAAAAAA G50 DLLAELLRAVDAARAAAEAAAAAACAAAAAAAAAAAAAAAAAAAAAAAAA	G37	MTPEERARALLEAALAHTQARLAELKARTAESPEYAAEAEAAAARLARLQAALAA
G40 SVKEAIEEAIKEIKETEELSAGLSSTERAERIEETRKRAEERIREVIEKKKKE G41 SLEEVKQEAEARIARLRAEARICAASSPEECAEQRAIVEAREARIKALVE (42 YLEAVAAI KKI EDDIA AQLAKAKAAADTPPIMKAILAAETQAILELATKQI EKAFAKI.K (43 SLEELIKELEELKKKLLEALAALALALARRAANQAPPELREKLLALADALKKIYISLI.K (44 SLAEALRALAAAAGKAIGNIAAGAAFIKAALAAAAAAAAAAA (45 MTEEKEKREEKKKAAKREAERALAELARLAAAAAAAAAAAA (46 SEAEKIVEKMEVREVYRELAAKKGEEEAKKVKEEMEKELKKI.KEEREKVIKEKEEK (47 ELEKKEEELKKKAAERAAAAAALAYALAKALAELLEALAKALA (48 EEEAARKKI.QEEVEKI.ERETKERVKELEEKAKESTPEEAEKYKKEAERVVEETVKKIEEICKS (49 ILALAARLAELAARRAAIBARRAEVAARRAARAAAAAAAAAA (50 DILAEILRAVDAAIRAAAAAATEEKAAAAA (51 SPEALREACRAELEAVNKEYEKAKEEAKKI.TPEEAKKVI.AEONKRI.REAVERCRAAEA (52 EEEKKAEELEAKKKLAEILKEETKEREEKERTEEELAKKI.GEERERKYKEAERVVEETVKKIEEICKS (53 SPEALREACRAELEAVNKEYEKAKEEAKKI.TPEEAKKVI.AEONKRI.REAVERCRAAEA (52 EEEKKAEELEAKKI.AEILKEERERREARALEEERRAREEERREEERRE (53 MMEELKEI.VERI.LELIDELIKNKEI.QPFAEELIKRIKEASKI.SLEEFYKKVKEILEFAKKI.KELE (54 MMEELKEI.VERI.LELIDELIKNKEI.QPFAEELIKRIKEASKI.SLEEFYKKVKEILEFAKKI.KELE (55 SEEEKI.KELAKKREELEAAKARREAEVARVI.AEESEAAAKAAAAELTAAIVAKIIKEFI.KKI.EE (56 KEEKIKELEEKAKELEEFKKAAKELEEREKAAGDKEAEKYKKEAKELIKKKKEAEKKKREILE (57 EELAALAEELAAARRAALAAAATRAAAEBARAAARAAAAAAAAAAAAAAAAAAAAAAA	G38	DKLEKELAETTAEAEALAAAAAKAAAEDPEKAKEYAHRLAVAQRRRDNIEKELEKKK
G11 SLEEVKQEAEARIARLRAEAERICAASSPEECAEQRAIVEAREARIKALVE G12 YLEEAVAALKKLRDDLAAQLAKAKAAADTPEMKALAAETQALLELATKQLEKAEAKLK G13 SLEELIKELEELIKKKLEALAALALALARAAAAAAAAAA G14 SLAEALRALAAAAAGKALGIIAAGAAFLKALLAALAAAAAAAAAAA G15 MTEEKKREEEKKKEAGIIAAGAAFLKALLAALAAAAAAAAAA G16 SHAEKIVEKMEVKEYYELAAKKGEEAKKYKEEMEKELKKLKEEREKVIKEKEEK G17 ELEKKEEELKKKAERAAKAAALAYAALAYLAKALALELLEALAKALA G18 EEEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G19 ILALAARLAELAARRAAIFARRAEVAARRAARAAAAAAAAAAA G10 SPEALRAVDAAIRAAAALAAAAATEEEKLAVLQAGRLAIRIFRFILALLRALLS G10 SPEALRAVDAAIRAAAAALAAAAATEEEKLAVLQAGRLAIRIFRFILALLRALLS G11 SPEALRAVDAAIRAAAAALAAAAATEEEKLAVLQAGRLAIRIFRFILALLRALLS G12 EEEKKAEELLIAALKRKAEEETARLKAEGKEAEAEAFRAECEAKIAAAK G13 EEELKKAIEERKKI AELKEERERRERARAELEARREREERRRE G14 MMEELKELVERLLELIDELLKINKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G15 SEEKLKELAKKKKEELEAAKARREAEVARVLAEESEAAAKAAALTAAAVIKKEFLKKLE G16 KEEKIKELEERAKELEEFERKAAKELIEAEKAODKERAEREYKERKAEKELKEL G17 EELARLAEELAARREALEALRAGEKEERAREAEVARVLAEESEAAAKAAAELTAAIVAKHKEFLKKLE G18 ELEEELAKKREELEAAKARRAALAAAAAAAAAAAAAAAAA	G39	MEREREEERRRAEEEAERARRAAERLEEKLAARKKEREKLLKERLEKELEELKKELE
G12 YLEAVAALKKIRDDLAAQLAKAKAAADTPENKALAAETQALLELATKQLEKAEAKLK G13 SLEELLKELEELKKKLLEALAALALALARAANAAPPELREKLLALADALKKIVISILK G14 SLAEALRALAAAAGKALGNIAAGAAFLKALLAALAAAAAAAAAA G15 MTEEKKREEKKKEAAKREABRALAELARLAAAAAAAAAAAA G16 MTEEKKREEKKKEAAKREABRALAELARLAAAAAAALALLAALA G16 SEAEKIVEKMEVKEYRELAAKKGEEEAKKVEEMEKELKKLKEEREKVIKEKEEK G17 ELEKKEELKKKAEERAAKAAALLAYLAKALAELLEALAKALA G18 EEEAARKKLQEEVEKLEKTFKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G19 ILALAARLAELAARAAALAAAAAAAAAAAAAAAAA G20 DLAELLRAVDAAIRAAAEALAAAAATEEKKUVAGGRLAIRIFRFILALLRAILLS G31 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRLREAVERCRAAEA G32 EEEKKAAKEKELLIAALKKKAEETARLKAEGKEAEAAFRAECEAKIAAAK G33 EEELKKAIEEAKKALELLEGERERRERAARLEEERRREEGERREE G34 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKKLE G35 SEEKLKALAELKEEFERKAAELEEFERKAEL G36 KEEKIKELBEAKKARELEAKAREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLE G36 KEEKIKELBEKAKELEEFEFKKAAKELBEKKAELEKKYEEAKKELKKKEAEKKRELE G37 ELARLAEELAAARREALRAELEALREQEERLREEGERRREEGEK G38 ELEELAKALREERAALKARAAALRAAALRAAAERAAAAARAAAAAAAAAA	G40	SVKEAIEEAIKEIKETEELSAGLSSTERAERIEETRKRAEERIREVIEKKKKE
G43 SLEELLKELEELKKKLLEALAALALARAANQAPPELREKILALADALKKIYISILK G44 SLAEALRALAAAAGKALGNIAAGAAFLKALLAALAAAAAAAAAA G45 MTEEEKEREEEKKKEAAKREAERALAELARLLAAAAAAAAAA	G41	SLEEVKQEAEARIARLRAEAERICAASSPEECAEQRAIVEAREARIKALVE
G44 SLAEALRALAAAAGKALGNIAAGAAFLKALLAALAAAAAAAAAA G45 MTEEEKEREEKKKEAAKREAERALAELARLLAAAAAAAAAAA	G42	YLEEAVAALKKLRDDLAAQLAKAKAAADTPEMKALAAETQALLELATKQLEKAEAKLK
MITEEKKREEEKKKEAAKREAERALAELARLAAAAAALALAAA G66 SEAEKLVEKMREVRKEYRELAAKKGEEEAKKVKEEMEKELKKLKEEREKVIKEKEEK G67 ELEKKEELKKKKAEERAAKAAALAYALAKALAELLEALAKALA G88 EEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G69 LLAELARAAAAARAELAAAAATEEEKLAVLQAGRLAIRLFRFLIALLALLIS G50 DLIAELIRANDAAIRAAAAATEEEKLAVLQAGRLAIRLFRFLIALLIALLIS G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAEKVALAEQNKRIREAVERCRAAEA G52 EEEKKAKKELLIAALKRKAEEETARLKAEGKEAEAEAFRACEAKIAAK G53 EEELKKAIEEAKKLAELKEERERRERARLEEERRREGEEFRRRE G54 MMEELKELVERLLELIDELLKNELQPFAEELIKRFKEASKISLEEFYKKVKELLEEAEKKLKEL G55 SEEKLKELAKKKEELAAKARREAE VARVLAEESEAAAKAAALTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEFEKKAAKELEEAEKAGDKEKAEKYEKAKEALLKKKKEAEKKKEEL G56 KEEKIKELEEKAKELEEFEKKAAKELEEAEKAGDKEKAEKYEKAKELLKKKKEAEKKKEEL G57 EELARLAEELAAARREALRAELEALRREQEERLAGKEAEKAKKEAEKKKEAEKKKEEL G58 ELEEELAKKIREEREAALKARAAALRAAAEAERAAAAAAAAAAAAAAAAA	G43	SLEELLKELEELKKKLLEALAALALARRAANQAPPELREKLLALADALKKLYLSLLK
G46 SEAEKIVEKMREVRKEYRELAAKKGEEEAKKVKEEMEKELKKLKEEREKVIKEKEEK G47 ELEKKEEELKKKAEERAAKAAALLAYALAKALAELLEALAKALA G48 EEEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G49 LLALAARLAELAARAAAEALAAAAATEEKLAVLQAGRLAIRLFRFLLALLRALLS G50 DLLAELLRAVDAAIRAAAEALAAAAATEEKLAVLQAGRLAIRLFRFLLALLRALLS G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQWKRLREAVERCRAAEA G52 EEEKKAKEELLIAALKKAEEETARLKAEGKEAEAAFRAECEAKIAAAK G53 EEELKAAIEEAKKLAELKERERRERAARLEEERRREEERRRE G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G55 SEEKLKELEEKAKELEEFKKAAKELIEAEKAGDKEAEAAKAAAAAAAAAKKEELEAAKKKAEELE G66 KEEKIKELEEKAKELEEFKKAAKELIEAEKGDKERAEKYEKAAKALLKKKKEAEKKKEELE G67 EELARLAEELAAARREALRAALEALRRFQGEFLREEEERRREEEEK G68 ELEEELAKKLREEREAALKARAAALRAAAEARAAARAAAAAAAAAA	G44	SLAEALRALAAAAGKALGNIAAGAAFLKALLAALAAAAAAAAAA
ELEKKEEELKKKAEERAAKAAALLAYALAKALAELLEALAKALA  G88 EEEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS  G49 LLALAARLAELAARRAAIEARRAEVAARRAARAAAAAAAAAA  G50 DLLAELLRAVDAAIRAAAEALAAAAATEEKLAVLQAGRLAIRLFRFLLALLRALLLS  G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRLREAVERCRAAEA  G52 EEEKKAKEKELLIAALKRKAEEETARLKAEGKEAEAEAFRAECEAKIAAAK  G53 EEEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEERRRE  G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL  G55 SEEKLKELAKKREELEAAKARREAEVARVLAEESEAAAKAAELTAAIVAKHKEFLKKLEE  G56 KEEKIKELEEKAKELEEFFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKKELE  G57 EELARLAEELAAARREALRAELEALRREQEERLREEEEERRREEEEK  G58 ELEELAKKLEEREAALKARAAAALRAAAEAARAAAAAAAAAA	G45	MTEEEKEREEEKKKEAAKREAERALAELARLLAAAAAALALLAALA
EEEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS G49 LLALAARLAELAARRAAIEARRAEVAARRAARAAAAAEAAAALA G50 DLLAELLRAVDAAIRAAAEALAAAAATEEEKLAVLQAGRLAIRLFRFLLALLRALLLS G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRLREAVERCRAAEA G52 EEEKKAKEKELLIAALKRKAEEETARLKAEGKEAEAAFARECEAKIAAAK G53 EEEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEERRRE G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G55 SEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAAAELTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEFFKKAAKELIEAEKAGDKERAEKYKEKAKELLKKKKEAEKKKELE G57 EELARLAEELAAARREALRAELEALRREQOERLREEEEERRRREEEEK G58 ELEEELAKKLREGAALARAAAALRAAAEAERAAAAAAAAAAAAAAAAAA	G46	SEAEKLVEKMREVRKEYRELAAKKGEEEAKKVKEEMEKELKKLKEEREKVIKEKEEK
G59 DLIAELAARLAELAARRAAIEARRAEVAARRAARAAAAAAAAAAAAAAAAAAA	G47	ELEKKEEELKKKKAEERAAKAAALLAYALAKALAELLEALAKALA
G50 DILAELIRAYDAAIRAAAEALAAAAATEEEKLAVLQAGRLAIRLFRFILALIRAILIS G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRIREAVERCRAAEA G52 EEEKKAKEKELLIAALKRKAEEETARIKAEGKEAEAEAFRAECEAKIAAAK G53 EEEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEERRRE G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKIKEL G55 SEEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFILKKLEE G56 KEEKIKELEEKAKELEEFFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE G57 EELARLAEELAAARREALEALRAELEALRREQEERLREEEEERRRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEARAAARAAAKAAEAERERLA G59 LTEEEIKKLREQALQLREEINRIKKSKAALASPEEKAKLEELIKKK G60 AALAAALQAALAAAIDAAIAAAAARAAAARAAAEAKAKAEELIKKIK G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELEE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAALEAELLEKRREEEEEEEEEEEEEEEEEEE	G48	EEEEAARKKLQEEVEKLEKETKERVKELEEKAKESTPEEAEKYKKEAEEVVEETVKKIEEICKS
G51 SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRLREAVERCRAAEA G52 EEEKKAKEKELLIAALKRKAEEETARLKAEGKEAEAAEAFRAECEAKIAAAK G53 EEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEERRRE G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G55 SEEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAAAELTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEFKKAAKELIEAEKAGDKEKAEKYKEKAELLKKKKEAEKKRKELE G57 EELARLAEELAAARREALRAELEALRREQEERLREEEERRRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEAERAAARAAKAEAEREALA G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEELEKEKEAEREELIKKIK G60 AALAAALQAALAAAIDAAIAAAAAAAAAAAAAAAAAAAAA	G49	LLALAARLAELAARRAAIEARRAEVAARRAARAAAAAAAAAAAAAAAAAAA
G52 EEEKKAKEKELLIAALKRKAEEETARLKAEGKEAEAEAFRAECEAKIAAAK G53 EEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEERRRE G54 MMEELKELVERLLELIDELLKNKELOPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G55 SEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE G57 EELARLAEELAAARREALRAELEALRREQEERLREEEERRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEAERAAAARAAAA	G50	DLLAELLRAVDAAIRAAAEALAAAAATEEEKLAVLQAGRLAIRLFRFLLALLRALLLS
G53 EEEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEGERRRE G54 MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL G55 SEEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE G57 EELARLAEELAAARREALRAELEALRREQEERLREEGEERRREEGEK G58 ELEEELAKKLREEREAALKARAAALRAAAERAAARAAARAAARAAARAAARAAARAAAR	G51	SPEALREACRAELEAVNKEYEKAKEEAKKLTPEEAKKVLAEQNKRLREAVERCRAAEA
SEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE  G55 SEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE  G56 KEEKIKELEEKAKELEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE  G57 EELARLAEELAAARREALRAELEALRREQEERLREEEERRRREEEEK  G58 ELEEELAKKLREEREAALKARAAALRAAAEARAAARAAKAEAERERLA  G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEIKEKEAEREELIKKIK  G60 AALAAALQAALAAAIDAAIAAAAAARAAARAAARAEALKLLEELAK  G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK  G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKELEEKEKEKELEE  G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAAAAAAEEAELL  G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEE  G65 SSLAKKILELRKKALEGLKAGKTTPETKRFQDIVEKTLKEEAEKAAKKALEELK  G66 MELEKKIEEELAKMKELAAKGPEYPPELEKAGAKAREYREKLREEALKKEEEE  G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL  G68 AEALEDLARRLIAKVREEAEKRAGTPEEAKEAWKEAAELRARIEALRAALLAA  G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA  G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA  G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G52	EEEKKAKEKELLIAALKRKAEEETARLKAEGKEAEAEAFRAECEAKIAAAK
G55 SEEKKKELAKKREELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE G56 KEEKIKELEEKAKELEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE G57 EELARLAEELAAARREALRAELEALRREQEERLREEEERRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEARAAAEARAAARAAAAAAAAAA	G53	EEEELKKAIEEAKKKLAELKEERERRERAARLEEERRRREEEERRRRE
G56 KEEKIKELEEKAKELEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRELE G57 EELARLAEELAAARREALRAELEALRREQEERLREEEEERRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEARAAARAARAAKAEAERERLA G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEEIKEKEAEREELIKKIK G60 AALAAALQAALAAAIDAAIAAAAARAAARAAARAEEALKKLLEELAK G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEEKKAKEKAKEELEEKKKKEKELKELE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE	G54	${\sf MMEELKELVERLLELIDELLKNKELQPFAEELIKRFKEASKLSLEEFYKKVKELLEEAEKKLKEL}$
G57 EELARLAEELAAARREALRAELEALRREQEERLREEEEERRRREEEEK G58 ELEEELAKKLREEREAALKARAAALRAAAEAERAARAARAAKAEAERERLA G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEEIKEKEAEREELIKKIK G60 AALAAALQAALAAAIDAAIAAAAARAAARAAARAEEALKKLLEELAK G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEE G65 SSLAKKILELRKKALEGLKAGKRTPETKRFQDIVEKTLKEEAEKAAKKALEELK G66 MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAG G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G55	SEEEKLKELAKKRKEELEAAKARREAEVARVLAEESEAAAKAKAAELTAAIVAKHKEFLKKLEE
G58 ELEEELAKKLREEREAALKARAAALRAAAEARAAARAAARAAAKAEAERERLA G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEEIKEKEAEREELIKKIK G60 AALAAALQAALAAAIDAAIAAAAAARAAARAAARAEEALKKLLEELAK G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELKELE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE	G56	KEEKIKELEEKAKELEEEFKKAAKELIEAEKAGDKEKAEKYKEKAKELLKKKKEAEKKRKELE
G59 LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEEIKEKEAEREELIKKIK G60 AALAAALQAALAAAIDAAIAAAAAAAAAAAAAAAEALKKLLEELAK G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELKELE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEE G65 SSLAKKILELRKKALEGLKAGKRTPETKRFQDIVEKTLKEEAEKAAKKALEELK G66 MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE G67 ELLKKLILLIKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALAALAALLAALLAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G57	EELARLAEELAAARREALRAELEALRREQEERLREEEEERRRREEEEK
G60 AALAAALQAALAAAIDAAIAAAAAAAAAAAAAAAAAAAAA	G58	ELEEELAKKLREEREAALKARAAALRAAAEAERAARAERAAAARAAKAEAERERLA
G61 SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK G62 MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELKELE G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE	G59	LTEEEIKKLREQALQLREEINRLKSKAALASPEEKAKLEEEIKEKEAEREELIKKIK
G62 MEKELEEKLKKKEEEKKEKAEEERKKAKEKAKELEEKKKKEKELEE G63 LPLAELLALAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL G64 AQAELEAKRAAAAALEELLEKRREEEEEEEEEEEEEEEEE G65 SSLAKKILELRKKALEGLKAGKRTPETKRFQDIVEKTLKEEAEKAAKKALEELK G66 MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAAAAAAAAAAAAAAAAAAAAAAAA	G60	AALAAALQAALAAAIDAAIAAAAAAAAAAAAAAAAAAAAA
G63 LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEAELL G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE	G61	SLAEIAARLAANKARAALFKALAAKLAKLTTPELAKKLAAKIVAK
G64 AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE	G62	MEKELEEKLKKKEEEKKEKEAEEERKKAKEKAKELEEKKKKEKELKELE
G65 SSLAKKILELRKKALEGLKAGKRTPETKRFQDIVEKTLKEEAEKAAKKALEELK G66 MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAALAALAALAAL	G63	LPLAELLALLAALAAAQLAAKAAYAAKKAAIKAAGEARKAAEAAAAAEEAELL
G66 MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G64	AQAELEAKRAAAAALEAELLEKRREEEEEEEEEEEEEEEEEE
G67 ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAAAAAAAAAAAAAAAAAAAAAAAA	G65	SSLAKKILELRKKALEGLKAGKRTPETKRFQDIVEKTLKEEAEKAAKKALEELK
G68 AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAAAAAAAAAAAAAAAAAAAAAAAA	G66	MELEKKIEEELAKMKELAAKGPEYRPELEKAGAKAREYREKLREEALKKEEEE
G69 AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAAAAAAAAAAAAAAAAAAAAAAAA	G67	ELLKKLILLILKIGRGLNELGKKLRKAGLKKLANKFFKIGRKLYEIAEKL
G70 SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAA G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAAAAAAAAAAAAAAAAAAAAAAAA	G68	AEALEDLARRLIAKVREEAEKRAKAGTPEEAKEAWKEAAELRARIEALRAALLAA
G71 DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	G69	AATIAAYAAKLAAHAAQCRALGAAHPEIKAAAEKNAAAIEAARDKALANAAA
G72 TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA G73 EEEERRRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAEALAALAAL	G70	SAAEAAFEAELAAAKAAYAAERDAAAAKYKDNLEKREAALREWHRKEAETIAALKAKHAAEKAAA
G73 EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAAL G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAEALAAL	G71	DVATLKALAAQYRAARAAVREEAARLAAAEPERAAEILAEGAALAAAFDAKAAAAAAAAAAAA
G74 SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAEALAALAAL	G72	TEEELRRELEARRAAAEEEARREAARKEQAELQAKAAALEAALKAAA
	G73	EEEERRREEEEREARLAALREENERRRAERQAKIAAAALAALLAALLAA
G75 SEIKEEAERREREEEEERARRIAEAEAARAAAAAAAAAAAA	G74	SLEENKKQWEKLQEETEKEVAKLKAEGDARRAALAAEAAARAAAEALAALAAL
	G75	SEIKEEAERREREEEEERARRIAEAEAARAAAAAAAAAAAA

G76	AEEELRAAEERAAALAEAAARKAAREARKAAEEAAKAAAEAAELERKRAE
G77	EEEEKERLKEELREKLKKLLEEASKLENPQEVSEEAKKVYEEYLAL
G78	SAKECTKLKVETHKKYQELAKKSKPEDLPELVKKKEEELKKIEEKCK
G79	EEEIRKRKEELEKKIAEAKEELEKAKSNPEMAKIAQELLEKLKAWAAEEIAKLEK
G80	AEEKEKRLEELKKEAARLEEEAARYKELAPETGLEARKKAGEAEREREKALEEIRCLEAE
G81	GYAELAKRYEEIAAKLKEQAKKNKEKGISEEKAKYLEEKAAEFEAKAKEAKAIYEA
G82	ETLAQLRAERDRAEARRAALLALPPEERAANAAAIAAAAAAAAAAETEAGIKKLEEEK
G83	LLEQLATLAALAAALAERAAREARRERLRREREEEERRRREEEERRRE
G84	EEEEKKRKEELEKLKAEKEAERAALKAAEEAYRAAREAARREAEERERRER
G85	LSPEELEARRAALRAAEEARRAAERAAREEARAAAAAAEAEARARLEAELAAAA
G86	DPEELKKEAEELAKKAEIYKKLAEEAAAKYSQSAADRLKAKAAEYEAKRKAVEAKLKALE
G87	EALRAAIDALAAATDALAAASTPEAAARLRAATAAAIRALYALAE
G88	SEVERLKAEAARLTERIVELAEKAMELAKKSTPEEAKKIMEEAKKERDRLRAERERALAEAEALE
G89	SKEEIEALEKKLAELKALAEKAAAENPVLAAQYRAQALEAEAQLEKLKKEA
G90	LSDLASALAQLALGLELLADPETKEEGLKLIAEALARLAAALEQLARLLAGLAAKAAEAA
G91	AEVAKLKAEAAAAKAKAAAYAAAGNLAAADAARKKALEYEAKANKALEE
G92	EEELAKAALEAERAALKAAREAERAAREAAAAAERAAAAAAEEARRAAEAEAERERAA
G93	SEEEIEKIKEEAIKKLKEVKAEAEKKKATSSPEEREKIEKEAKEKMDEILREEREKIEKLKKE
G94	EEEELEEKLKKLLEEKEKKLKKELEERKKKRKEKLEKAEKELKKKLE
G95	LDEAVAAAREAIRAAVEEAKKLYKEDPEKGKELLKAAQAALAALRAARAAAAAAAAA
G96	SALEEELAKAKAEAEKLAAETEKTGDEETAKKTLEARAKALKLEEEL
G97	SLRELLRLLASLALRLFRALRAAAGAFMAADPALGAALLAAVEALEEAFRALVLAILLS
G98	LAELYKKQAEEKQAQAAAALAQAAADPANAAELQAQAAKLQAQAAELQKKAAEALA
G99	EEEKEVEKKIKELLEKGKKSTPEEAAKYNAKAEYLKIEAEAKKRKEEAEKAKKLKELEEKL

Table 3: HDock scores for IL-2 mimics targeting IL-2R  $\!\alpha$  and IL-2R  $\!\beta$ 

IL-2 Mimetics and IL-2Rα	HDock	IL-2 Mimetics and IL-2Rβ	HDock
B73	-266.18	B41	-283.09
B30	-262.99	B78	-274.87
B19	-259.94	B66	-271.51
B12	-256.36	B73	-268.54
B46	-256.1	B19	-266.05
B85	-254.93	B42	-264.04
B50	-254.4	B53	-262.29
B28	-253.48	B70	-249.3
B42	-252.07	B14	-248.62

	B66	-247.32	B69	-248.6
	B92	-244.83	B63	-245.8
	B56	-241.86	B2	-244.07
:	B78	-240.6	B45	-243.82
	B53	-240.58	B75	-243.7
	B54	-240.03	B90	-243.13
	B67	-239.77	B30	-242.64
	B60	-239.71	B99	-241.69
	B14	-238.68	B71	-240.88
	B75	-238.26	B18	-240.85
	В9	-236.76	B58	-240.04
	B77	-235.83	B86	-237.62
	В33	-234.25	B98	-237.13
	B80	-232.22	B34	-233.13
	B64	-232.13	B36	-233.12
	B36	-232.1	B76	-233.09
	B58	-231.73	B25	-232.64
	B16	-230.57	B50	-232.58
	B4	-230.56	B26	-232.26
	B11	-229.48	B16	-231.97
	B2	-228.91	B12	-229.92
	B86	-228.15	B24	-228.96
	В93	-228.03	B56	-228.32
	B10	-227.84	B87	-227.6
	B71	-227.61	B92	-225.01
	B25	-226.9	B51	-223.91
	B96	-226.73	B88	-222.72
:	B37	-226.47	B77	-221.42
	B79	-226.42	B82	-220.4
	B87	-226.02	B67	-220.16

B43	-225.68	B46	-219.73
B82	-225.21	B4	-218.47
B68	-224.88	В0	-218.14
B76	-224.12	B28	-216.02
B18	-223.68	B96	-215.17
B89	-223.59	B10	-214.62
B35	-222.33	B20	-213.94
B38	-222.26	B80	-212.86
B98	-221.76	B32	-212.4
B40	-221.54	B83	-211.39
B70	-221.54	B44	-210.94
B26	-221.29	B68	-210.78
B13	-220.32	B74	-209.05
B39	-219.83	B35	-209
B45	-219.81	B84	-208.86
B41	-219.33	B31	-207.51
B49	-217.12	В3	-207.22
B97	-217.1	B38	-206.82
B72	-216.79	B49	-205.16
B99	-216.48	B11	-204.37
B15	-215.88	B37	-204.01
B22	-215.35	B97	-203.77
B29	-215.22	B61	-203.35
B52	-215.13	B39	-203.2
B90	-214.74	B54	-201.1
B51	-214.42	B27	-200.1
B20	-214.39	B93	-199.98
B74	-213.96	B43	-199.63
B27	-213.23	B17	-199.02
 B88	-212.92	B52	-198.86

B63	-211.11	B33	-198.72
B17	-210.81	B85	-198.55
B31	-210.55	B48	-198.42
B55	-209.91	B5	-198.4
B32	-209.14	B72	-196.92
B5	-206.15	B40	-196.5
B47	-206.07	B94	-195.94
B34	-205.46	B1	-193.57
В3	-205.42	B15	-193.53
B57	-205.28	B55	-190.82
B62	-204.36	B7	-189.85
B84	-203.91	B57	-189.79
B83	-201.54	B79	-189.54
B24	-200.87	B64	-189.35
B1	-200.44	B91	-189.31
B61	-200.07	В9	-189.02
В7	-199.55	B22	-188.94
B48	-197.47	B60	-186.98
B44	-196.46	B89	-185.69
B0	-195.97	B29	-184
B69	-195.65	B62	-182.49
B65	-195.24	B8	-181.75
B21	-195.03	B13	-180.98
B8	-192.53	B47	-179.07
B91	-188.54	B21	-177.55
B94	-185.84	B81	-176.32
B6	-183.34	B6	-172.16
B59	-180.23	B59	-167.59
B95	-174.85	B23	-167.13
B23	-167.66	B95	-161.25

B81 -163.65 B65

Table 4: HDock scores for IL-2 mimics targeting IL-2Rα and IL-2Rγ

IL-2 Mimetics and IL-2Rα	HDock	IL-2 Mimetics and IL-2Ry	HDock
G14	-289.8	G14	-290.86
G50	-281.82	G35	-289.62
G97	-273.2	G71	-276.1
G2	-261.96	G9	-274.13
G33	-254.27	G83	-266.59
G70	-254.27	G2	-263.08
G37	-251.79	G63	-258.95
G66	-248.84	G61	-257.87
G83	-248.61	G97	-255.6
G71	-244.66	G50	-255.49
G51	-244.46	G26	-252.8
G18	-242.97	G70	-252.07
G28	-242.86	G30	-249.95
G61	-241.7	G90	-249.32
G35	-241.13	G57	-248.37
G23	-240.98	G36	-247.29
G65	-240.87	G37	-247.22
G44	-240.73	G42	-246.37
G69	-240.24	G44	-244.12
G30	-238.8	G12	-243.49
G56	-238.58	G16	-243.02
G43	-238.15	G18	-242.61
G92	-238.03	G28	-241.43
G11	-236.9	G32	-241.03
G98	-236.19	G88	-240.63

G67	-235.11	G23	-239.76
G36	-234.53	G43	-239.59
G15	-233.55	G68	-239.25
G85	-232.64	G11	-236.5
G90	-232.34	G1	-236.28
G74	-231.44	G66	-235.87
G95	-230.47	G19	-235.43
G1	-229.89	G76	-231.9
G9	-229.06	G15	-231.52
G73	-228.44	G39	-231.4
G63	-228.37	G69	-229.72
G19	-227.89	G77	-229.33
G8	-227.69	G7	-228.79
G39	-227.37	G67	-228.73
G76	-225.45	G87	-228.67
G58	-225.28	G85	-227.87
G57	-225.23	G98	-227.86
G49	-224.89	G58	-227.72
G84	-224.87	G73	-227.27
G46	-224.37	G0	-226.34
G13	-223.61	G53	-226.24
G0	-223.35	G75	-225.41
G31	-221.81	G60	-224.77
G68	-221.7	G92	-223.79
G47	-221.26	G49	-223.55
G78	-221.21	G45	-221.54
G88	-219.56	G10	-221.17
G55	-219.21	G31	-221.15
G29	-218.42	G38	-220.99
 G75	-218.07	G95	-220.49

G41         -216.91         G33         -220.16           G77         -212.81         G51         -220.02           G87         -212.36         G41         -219.89           G24         -212.1         G84         -217.6           G45         -211.87         G4         -215           G42         -211.6         G82         -212.68           G5         -211.34         G29         -211.89           G81         -210.87         G47         -211.24           G32         -209.65         G6         -210.7           G94         -209.51         G13         -210.55           G54         -209.4         G74         -209.54           G52         -209.21         G86         -209.33           G7         -208.07         G55         -208.45           G53         -207.78         G54         -207.32           G25         -205.98         G20         -204.86           G10         -205.45         G34         -203.87           G59         -205.08         G99         -203.16           G80         -204.46         G59         -202.84           G89         -204.37				
G87         -212.36         G41         -219.89           G24         -212.1         G84         -217.6           G45         -211.87         G4         -215           G42         -211.6         G82         -212.68           G5         -211.34         G29         -211.89           G81         -210.87         G47         -211.24           G32         -209.65         G6         -210.7           G94         -209.51         G13         -210.55           G54         -209.4         G74         -209.54           G52         -209.21         G86         -209.33           G7         -208.07         G55         -208.45           G33         -207.78         G54         -207.32           G25         -205.98         G20         -204.86           G10         -205.45         G34         -203.87           G59         -205.08         G99         -203.16           G60         -204.46         G59         -202.84           G89         -204.37         G25         -202.44           G17         -202.19         G24         -201.79           G79         -201.81	G41	-216.91	G33	-220.16
G24       -212.1       G84       -217.6         G45       -211.87       G4       -215         G42       -211.6       G82       -212.68         G5       -211.34       G29       -211.89         G81       -210.87       G47       -211.24         G32       -209.65       G6       -210.7         G94       -209.51       G13       -210.55         G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -198.77 <td>G77</td> <td>-212.81</td> <td>G51</td> <td>-220.02</td>	G77	-212.81	G51	-220.02
G45         -211.87         G4         -215           G42         -211.6         G82         -212.68           G5         -211.34         G29         -211.89           G81         -210.87         G47         -211.24           G32         -209.65         G6         -210.7           G94         -209.51         G13         -210.55           G54         -209.4         G74         -209.54           G52         -209.21         G86         -209.33           G7         -208.07         G55         -208.45           G53         -207.78         G54         -207.32           G25         -205.98         G20         -204.86           G10         -205.45         G34         -203.87           G59         -205.08         G99         -203.16           G60         -204.46         G59         -202.84           G89         -204.37         G25         -202.44           G17         -202.19         G24         -201.79           G79         -201.97         G81         -201.56           G27         -201.81         G3         -200.46           G64         -201.52	G87	-212.36	G41	-219.89
G42       -211.6       G82       -212.68         G5       -211.34       G29       -211.89         G81       -210.87       G47       -211.24         G32       -209.65       G6       -210.7         G94       -209.51       G13       -210.55         G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196	G24	-212.1	G84	-217.6
G5       -211.34       G29       -211.89         G81       -210.87       G47       -211.24         G32       -209.65       G6       -210.7         G94       -209.51       G13       -210.55         G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196	G45	-211.87	G4	-215
G81       -210.87       G47       -211.24         G32       -209.65       G6       -210.7         G94       -209.51       G13       -210.55         G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -19	G42	-211.6	G82	-212.68
G32         -209.65         G6         -210.7           G94         -209.51         G13         -210.55           G54         -209.4         G74         -209.54           G52         -209.21         G86         -209.33           G7         -208.07         G55         -208.45           G53         -207.78         G54         -207.32           G25         -205.98         G20         -204.86           G10         -205.45         G34         -203.87           G59         -205.08         G99         -203.16           G60         -204.46         G59         -202.84           G89         -204.37         G25         -202.44           G17         -202.19         G24         -201.79           G79         -201.97         G81         -201.56           G27         -201.81         G3         -200.46           G64         -201.52         G72         -199.78           G22         -201.46         G27         -198.77           G20         -20.93         G52         -196.96           G40         -200.92         G5         -196.58           G34         -198.18 <td>G5</td> <td>-211.34</td> <td>G29</td> <td>-211.89</td>	G5	-211.34	G29	-211.89
G94       -209.51       G13       -210.55         G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -209.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -1	G81	-210.87	G47	-211.24
G54       -209.4       G74       -209.54         G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G32	-209.65	G6	-210.7
G52       -209.21       G86       -209.33         G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G94	-209.51	G13	-210.55
G7       -208.07       G55       -208.45         G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G54	-209.4	G74	-209.54
G53       -207.78       G54       -207.32         G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G52	-209.21	G86	-209.33
G25       -205.98       G20       -204.86         G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G7	-208.07	G55	-208.45
G10       -205.45       G34       -203.87         G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G53	-207.78	G54	-207.32
G59       -205.08       G99       -203.16         G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G25	-205.98	G20	-204.86
G60       -204.46       G59       -202.84         G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G10	-205.45	G34	-203.87
G89       -204.37       G25       -202.44         G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G59	-205.08	G99	-203.16
G17       -202.19       G24       -201.79         G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G60	-204.46	G59	-202.84
G79       -201.97       G81       -201.56         G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G89	-204.37	G25	-202.44
G27       -201.81       G3       -200.46         G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G17	-202.19	G24	-201.79
G64       -201.52       G72       -199.78         G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G79	-201.97	G81	-201.56
G22       -201.46       G27       -198.77         G20       -200.93       G52       -196.96         G40       -200.92       G5       -196.58         G34       -198.18       G78       -196.1         G72       -197.62       G40       -195.96         G99       -197.26       G21       -195.94	G27	-201.81	G3	-200.46
G20 -200.93 G52 -196.96 G40 -200.92 G5 -196.58 G34 -198.18 G78 -196.1 G72 -197.62 G40 -195.96 G99 -197.26 G21 -195.94	G64	-201.52	G72	-199.78
G40 -200.92 G5 -196.58 G34 -198.18 G78 -196.1 G72 -197.62 G40 -195.96 G99 -197.26 G21 -195.94	G22	-201.46	G27	-198.77
G34 -198.18 G78 -196.1 G72 -197.62 G40 -195.96 G99 -197.26 G21 -195.94	G20	-200.93	G52	-196.96
G72 -197.62 G40 -195.96 G99 -197.26 G21 -195.94	G40	-200.92	G5	-196.58
G99 -197.26 G21 -195.94	G34	-198.18	G78	-196.1
	G72	-197.62	G40	-195.96
G38 -195.1 G46 -195.23	G99	-197.26	G21	-195.94
	G38	-195.1	G46	-195.23

G91	-194.48	G22	-192.55
G16	-194.05	G17	-192.42
G4	-190.55	G64	-191.91
G86	-189.76	G79	-190.15
G26	-189.49	G91	-189.24
G48	-189.13	G48	-186.86
G21	-188.47	G89	-186.59
G82	-186.88	G65	-185.23
G93	-185.74	G80	-183.47
G80	-181.05	G94	-181.76
G96	-177.09	G56	-181.69
G6	-174.79	G8	-174.57
G62	-173.53	G96	-168.89
G3	-169.35	G93	-166.7
G12		G62	-154.13

Table 5: The sequence of IL-2R $\gamma$  mimics

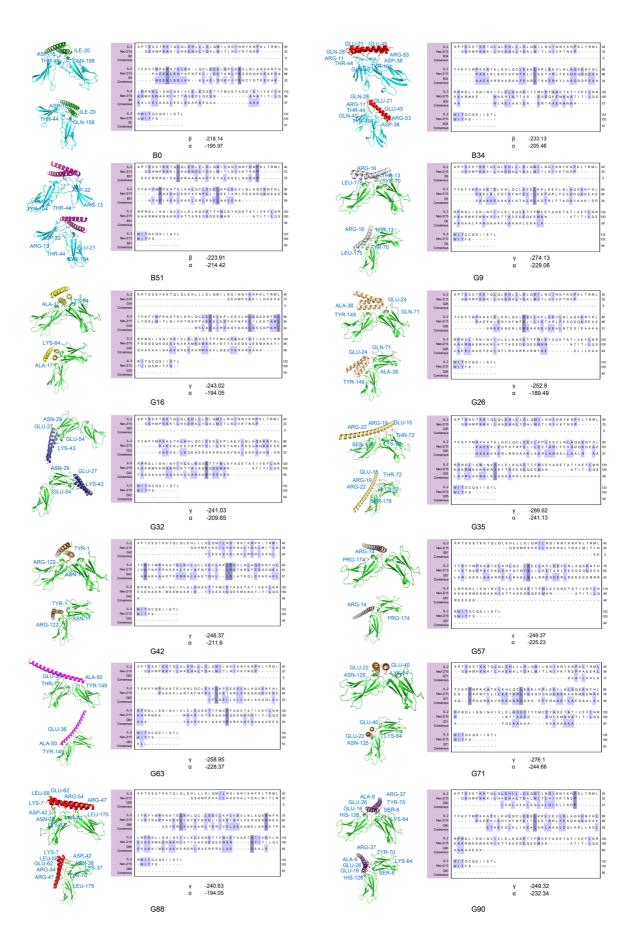
Complex design model	Sequence	
G9	SAAA <b>KEAAKALATALRLAGTRLFT</b> AGAVAAKIDPAAGAALFAAGAAAFAAAAAL	
G9		
G16	MSLAEAI <b>RDAGVAAAL<mark>A</mark>SGDPAHLDAA</b> KAAIAAAVSPEEAARWAAVLDEDYARA	
GIO		
625	AAEEEAERLF <b>RAAA<mark>E</mark>LAERLAR</b> AALLAALR AALAARLAANALKIAAAAAALAAA	
G35		
2.12	YLEEAVAALKKLRDDLAAQLAKAKAAADTPEMKALAAETQALLELATKQLEKAE	
G42		
G57	EELA <b>RLAEELAAARREALRAELEA</b> LRREQEERLREEEEEERRREEEEK	
	DVATEVAL A COMPANDA A VIDERA A DVA A A EDEDA A EM A ECA A VA A A EDEVA	
G71	DVATLKALAAQYRAARAA <b>VRE<mark>E</mark>AARLAAAEPERAAEILAEGAA</b> LAAAFDAKAAA	

Table 6: The sequence of IL-2Rβ mimics

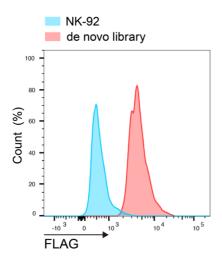
Complex design model	Sequence
D0	MEEKLE! <b>LKKKLAELD</b> GKY <mark>IYEKCYGT</mark> EEAKKALEELKAALEELAKAEKEAAA
В0	
D24	AAEAARRAARAAFDARL <b>TAA<mark>E</mark>RKYLAAQ</b> DDPEAAAAWLAEIAAI <mark>E</mark> AERTAAE <mark>R</mark>
B34	AWAA
B51	EEERRRQIEALKRAAA <b>AAEY<mark>E</mark>YALAKELAAKDPAYA</b> PLAEALKAELERLKAELA
DJI	

Table 7: The ipTM and pTM score of IL-2 mimics

IL-2 mimics	ipTM	рТМ
B34G35R-GALA4	0.63	0.7
B34G35R-GALA5	0.55	0.67
B34G35R-GALA6	0.46	0.61
B51G35R-GALA4	0.62	0.72
B51G35R-GALA5	0.66	0.75
B51G35R-GALA6	0.5	0.62
B51G9-GALA4	0.66	0.75
B51G9-GALA5	0.7	0.72
B51G9-GALA6	0.63	0.71



Extended Data Fig. 1 | Visual inspection for the de novo design protein. Multiple sequence alignment (MSA) via DNAMAN revealed low similarity between the synthetic sequence and native IL-2/neo-2-15 (de novo IL-2 mimic(I)) with IL-2R $\beta$  and  $\gamma$ ; structural visualization of the binding sites (front and side views) generated using PyMOL; molecular docking scores were subsequently quantified using HDock.



**Extended Data Fig. 2** | **The verification of the library construction of de novo library.** De novo library expression. At 72 h after retroviral transduction, the expression of de novo library on human NK-92 cells were measured by staining with anti-FLAG antibody, followed by flow cytometry analysis. NK-92 cells without transduction were used as negative controls. The wave peak shown in blue correspond to the isotype controls and the red histograms indicate positive fluorescence of de novo library expression.

## Reference

[1] SILVA D A, YU S, ULGE U Y, et al. De novo design of potent and selective mimics of IL-2 and IL-15 [J]. Nature, 2019, 565(7738): 186-91.