FIGURE 1A (SEQ ID NO:1)

KKVVLGKKGDTVELTCTASQKKSIQFHWKNSNQIKILGNQGSFLTKGPSKLNDRADSRRSLWDQ
GNFPLIIKNLKIEDSDTYICEVEDQKEEVQLLVFGLTANSDTHLLQGQSLTLTLESPPGSSPSV
QCRSPRGKNIQGGKTLSVSQLELQDSGTWTCTVLQNQKKVEFKIDIVVLAFQKASSIVYKKEGE
QVEFSFPLAFTVEKLTGSGELWWQAERASSSKSWITFDLKNKEVSVKRVTQDPKLQMGKKLPLH
LTLPQALPQYAGSGNLTLALEAKTGKLHQEVNLVVMRATQLQKNLTCEVWGPTSPKLMLSLKLE
NKEAKVSKREKAVWVLNPEAGMWQCLLSDSGQVLLESNIKVLPTWSTPVQPMALIVLGGVAGLL
LFIGLGIFFCVRCRHRRRQAERMSQIKRLLSEKKTCQCPHRFQKTCSPI

FIGURE 1B (SEQ ID NO:4)

TCTASQKKSIQFHWKNSNQIKILGNQGSFLTKGPSKLNDRADSRRSLWDQGNFPLIIKNLKIED
SDTYICE

FIGURE 2A (SEQ ID NO:2)

MMVFQPISEFLLIRNAGMSMYFNKIISFNIISRIVICIFLICGMFMAGASEKYDANAPQQVQPY
SVSSSAFENLHPNNEMESSINPFSASDTERNAAIIDRANKEQETEAVNKMISTGARLAASGRAS
DVAHSMVGDAVNQEIKQWLNRFGTAQVNLNFDKNFSLKESSLDWLAPWYDSASFLFFSQLGIRN
KDSRNTLNLGVGIRTLENGWLYGLNTFYDNDLTGHNHRIGLGAEAWTDYLQLAANGYFRLNGWH
SSRDFSDYKERPATGGDLRANAYLPALPQLGGKLMYEQYTGERVALFGKDNLQRNPYAVTAGIN
YTPVPLLTVGVDQRMGKSSKHETQWNLQMNYRLGESFQSQLSPSAVAGTRLLAESRYNLVDRNN
NIVLEYQKQQVVKLTLSPATISGLPGQVYQVNAQVQGASAVREIVWSDAELIAAGGTLTPLSTT
QFNLVLPPYKRTAQVSRVTDDLTANFYSLSALAVDHQGNRSNSFTLSVTVQQPQLTLTAAVIGD
GAPANGKTAITVEFTVADFEGKPLAGQEVVITTNNGALPNKITEKTDANGVARIALTNTTDGVT
VVTAEVEGQRQSVDTHFVKGTIAADKSTLAAVPTSIIADGLMASTITLELKDTYGDPQAGANVA
FDTTLGNMGVITDHNDGTYSAPLTSTTLGVATVIVKVDGAAFSVPSVTVNFTADPIPDAGRSSF
TVSTPDILADGTMSSTLSFVPVDKNGHFISGMQGLSFTQNGVPVSISPITEQPDSYTATVVGNS
VGDVTITPQVDTLILSTLQKKISLFPVPTLTGILVNGQNFATDKGFPKTIFKNATFQLQMDNDV
ANNTQYEWSSSFTPNVSVNDQGQVTITYQTYSEVAVTAKSKKFPSYSVSYRFYPNRWIYDGGRS
LVSSLEASRQCQGSDMSAVLESSRATNGTRAPDGTLWGEWGSLTAYSSDWQSGEYWVKKTSTDF
ETMNMDTGALQPGPAYLAFPLCALSI

FIGURE 2B (SEQ ID NO:5):

QGLSFTQNGVPVSIS

FIGURE 2C (SEQ ID NO:6):

GQRQSVDTHFVK

FIGURE 2D (SEQ ID NO:7):

LTLTAAVIGDGAPANGKTAITVEFTVADFEGKPLAGQEVVITTNNGALPNKITEKTDANGVARI
ALTNTTDGVTVVTAEVEGQRQSVDTHFVK

FIGURE 2E (SEQ ID NO:8):

GTIAADKSTLAAVPTSIIADGLMASTITLELKDTYGDPQAGANVAFDTTLGNMGVITDHNDGTY
SAPLTSTTLGVATVTVKVDGAAFSVPSVTVNFTAD

FIGURE 2F (SEQ ID NO:9):

PIPDAGRSSFTVSTPDILADGTMSSTLSFVPVDKNGHFISGMQGLSFTQNGVPVSISPITEQPD
SYTATVVGNSVGDVTITPQVDTLILSTLQKKISLFPV

FIGURE 2G (SEQ ID NO:10):

PTLTGILVNGQNFATDKGFPKTIFKNATFQLQMDNDVANNTQYEWSSSFTPNVSVNDQGQVTIT
YQTYSEVAVTAKSKKFPSYSVSYRFYPNR

FIGURE 2H (SEQ ID NO:11):

LTLTAAVIGDGAPANGKTAITVEFTVADFEGKPLAGQEVVITTNNGALPNKITEKTDANGVARI
ALTNTTDGVTVVTAEVEGQRQSVDTHFVKGTIAADKSTLAAVPTSIIADGLMASTITLELKDTY
GDPQAGANVAFDTTLGNMGVITDHNDGTYSAPLTSTTLGVATVTVKVDGAAFSVPSVTVNFTAD

FIGURE 2I (SEQ ID NO:12):

LTLTAAVIGDGAPANGKTAITVEFTVADFEGKPLAGQEVVITTNNGALPNKITEKTDANGVARI
ALTNTTDGVTVVTAEVEGQRQSVDTHFVKGTIAADKSTLAAVPTSIIADGLMASTITLELKDTY
GDPQAGANVAFDTTLGNMGVITDHNDGTYSAPLTSTTLGVATVTVKVDGAAFSVPSVTVNFTAD
PIPDAGRSSFTVSTPDILADGTMSSTLSFVPVDKNGHFISGMQGLSFTQNGVPVSISPITEQPD
SYTATVVGNSVGDVTITPQVDTLILSTLQKKISLFPV

FIGURE 2J (SEQ ID NO:13):

LTLTAAVIGDGAPANGKTAITVEFTVADFEGKPLAGQEVVITTNNGALPNKITEKTDANGVARI
ALTNTTDGVTVVTAEVEGQRQSVDTHFVKGTIAADKSTLAAVPTSIIADGLMASTITLELKDTY
GDPQAGANVAFDTTLGNMGVITDHNDGTYSAPLTSTTLGVATVTVKVDGAAFSVPSVTVNFTAD
PIPDAGRSSFTVSTPDILADGTMSSTLSFVPVDKNGHFISGMQGLSFTQNGVPVSISPITEQPD
SYTATVVGNSVGDVTITPQVDTLILSTLQKKISLFPVPTLTGILVNGQNFATDKGFPKTIFKNA
TFQLQMDNDVANNTQYEWSSSFTPNVSVNDQGQVTITYQTYSEVAVTAKSKKFPSYSVSYRFYP
NR

FIGURE 3 (SEQ ID NO:3)

ATGATGGTTTTCCAGCCAATCAGTGAGTTTCTCTTGATAAGGAATGCGGGAATGTCTATGTATT
TTAATAAAATAATTTCATTTAATATTATTTCACGAATAGTTATTTGTATCTTTTTGATATGTGG
AATGTTCATGGCTGGGGCTTCAGAAAAATATGATGCTAACGCACCGCAACAGGTCCAGCCTTAT
TCTGTCTCTTCATCTGCATTTGAAAATCTCCATCCTAATAATGAAATGGAGAGTTCAATCAATC
CCTTTTCCGCATCGGATACAGAAAGAAATGCTGCAATAATAGATCGCGCCAATAAGGAGCAGGA
GACTGAAGCGGTGAATAAGATGATAAGCACCGGGGCCAGGTTAGCTGCATCAGGCAGGGCATCT
GATGTTGCTCACTCAATGGTGGGCGATGCGGTTAATCAAGAAATCAAACAGTGGTTAAATCGAT
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TTGGCTGGCTCCTTGGTATGACTCTGCTTCATTCCTCTTTTTTAGTCAGTTAGGTATTCGCAAT
AAAGACAGCCGCAACACACTTAACCTTGGCGTCGGGATACGTACATTGGAGAACGGTTGGCTGT
ACGGACTTAATACTTTTTATGATAATGATTTGACCGGCCACAACCACCGTATCGGTCTTGGTGC
CGAGGCCTGGACCGATTATTTACAGTTGGCTGCCAATGGGTATTTTCGCCTCAATGGATGGCAC
TCGTCGCGTGATTTCTCCGACTATAAAGAGCGCCCAGCCACTGGGGGGGATTTGCGCGCGAATG
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TGTTGCTTTATTTGGTAAAGATAATCTGCAACGCAACCCTTATGCCGTGACTGCCGGGATCAAT
TACACCCCCGTGCCTCTACTCACTGTCGGGGTAGATCAGCGTATGGGGAAAAGCAGTAAGCATG
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CCGGCCTGCCGGGTCAGGTTTATCAGGTGAACGCACAAGTACAAGGGGCATCTGCTGTAAGGGA
AATTGTCTGGAGTGATGCCGAACTGATTGCCGCTGGCGGCACATTAACACCACTGAGTACCACA
CAATTCAACTTGGTTTTACCGCCTTATAAACGCACAGCACAAGTGAGTCGGGTAACGGACGACC
TGACAGCCAACTTTTATTCGCTTAGTGCGCTCGCGGTTGATCACCAAGGAAACCGATCTAACTC
ATTCACATTGAGCGTCACCGTTCAGCAGCCTCAGTTGACATTAACGGCGGCCGTCATTGGTGAT
GGCGCACCGGCTAATGGGAAAACTGCAATCACCGTTGAGTTCACCGTTGCTGATTTTGAGGGGA
AACCCTTAGCCGGGCAGGAGGTGGTGATAACCACCAATAATGGTGCGCTACCGAATAAAATCAC
GGAAAAGACAGATGCAAATGGCGTCGCGCGCATTGCATTAACCAATACGACAGATGGCGTGACG
GTAGTCACAGCAGAAGTGGAGGGGCAACGGCAAAGTGTTGATACCCACTTTGTTAAGGGTACTA
TCGCGGCGGATAAATCCACTCTGGCTGCGGTACCGACATCTATCATCGCTGATGGTCTAATGGC
TTCAACCATCACGTTGGAGTTGAAGGATACCTATGGGGACCCGCAGGCTGGCGCGAATGTGGCT
TTTGACACAACCTTAGGCAATATGGGCGTTATCACGGATCACAATGACGGCACTTATAGCGCAC
CATTGACCAGTACCACGTTGGGGGTAGCAACAGTAACGGTGAAAGTGGATGGGGCTGCGTTCAG
TGTGCCGAGTGTGACGGTTAATTTCACGGCAGATCCTATTCCAGATGCTGGCCGCTCCAGTTTC
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GCTAATAATACTCAGTATGAGTGGTCGTCGTCATTCACACCCAATGTATCGGTTAACGATCAGG
GTCAGGTGACGATTACCTACCAAACCTATAGCGAAGTGGCTGTGACGGCGAAAAGTAAAAAATT
CCCAAGTTATTCGGTGAGTTATCGGTTCTACCCAAATCGGTGGATATACGATGGCGGCAGATCG
CTGGTATCCAGTCTCGAGGCCAGCAGACAATGCCAAGGTTCAGATATGTCTGCGGTTCTTGAAT
CCTCACGTGCAACCAACGGAACGCGTGCGCCTGACGGGACATTGTGGGGCGAGTGGGGGAGCTT
GACCGCGTATAGTTCTGATTGGCAATCTGGTGAATATTGGGTCAAAAAGACCAGCACGGATTTT
GAAACCATGAATATGGACACAGGCGCACTGCAACCAGGGCCTGCATACTTGGCGTTCCCGCTCT
GTGCGCTGTCAATATAA

FIGURE 4

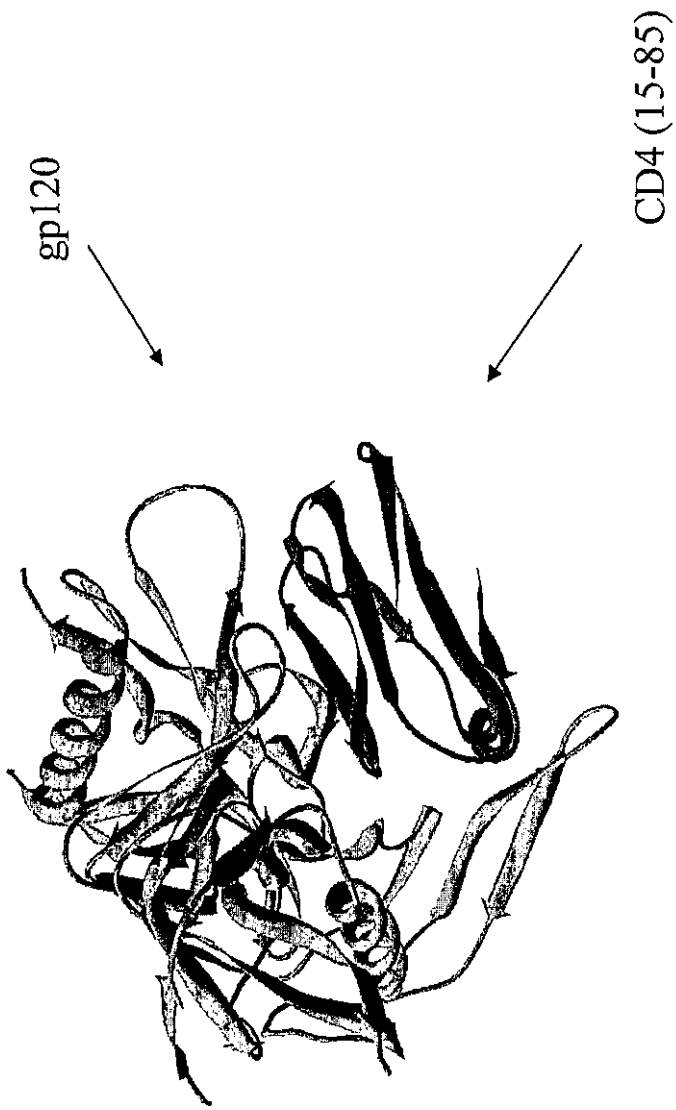


FIGURE 5

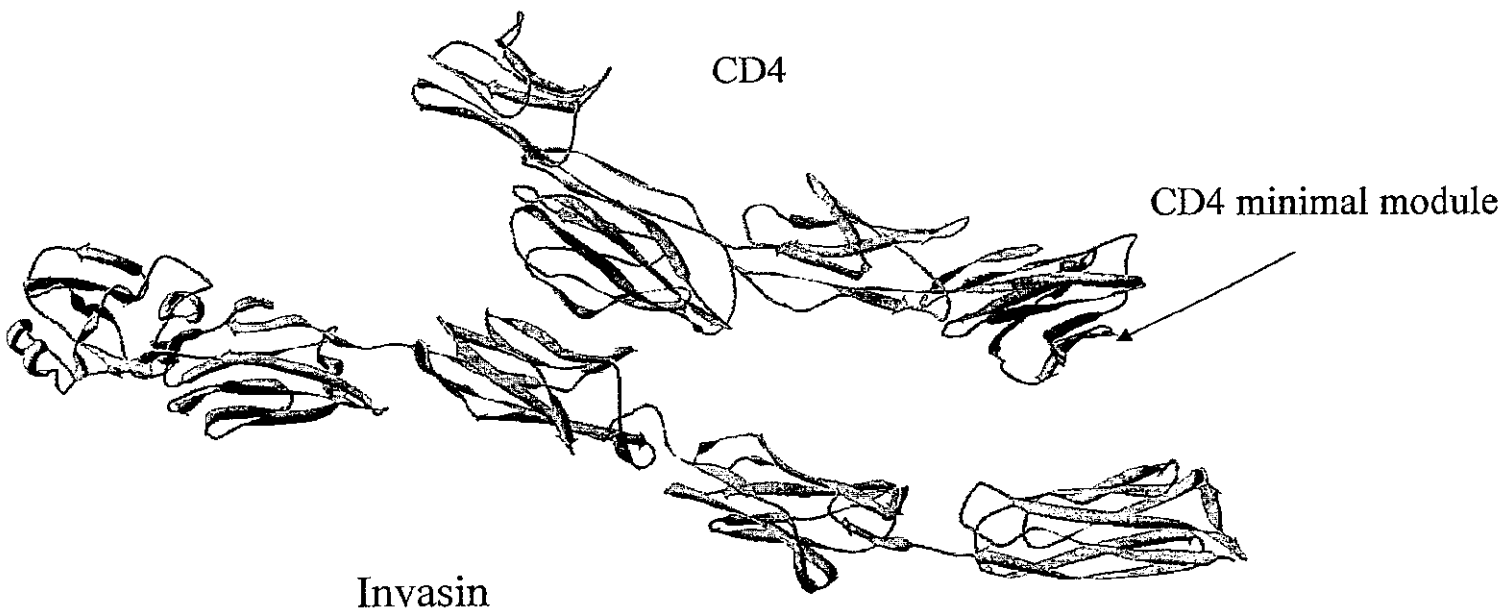
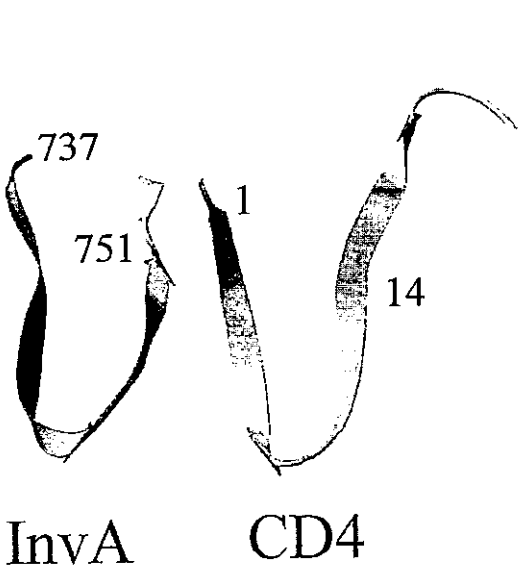
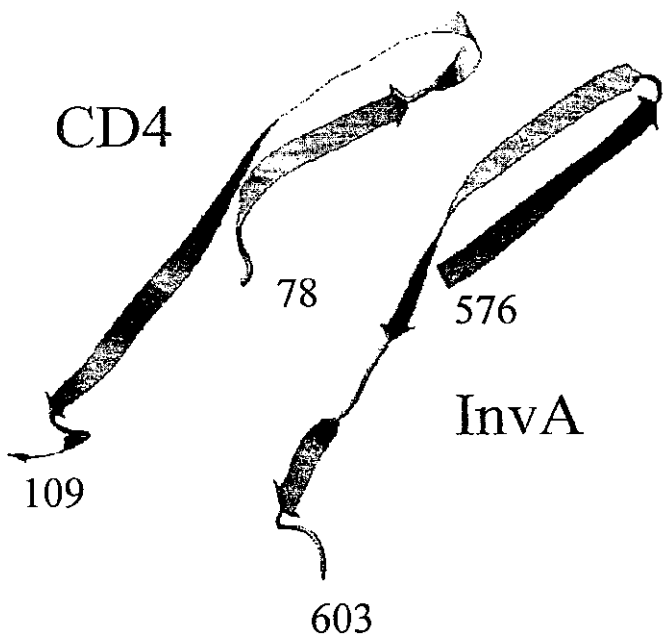


FIGURE 6



A



B

FIGURE 7

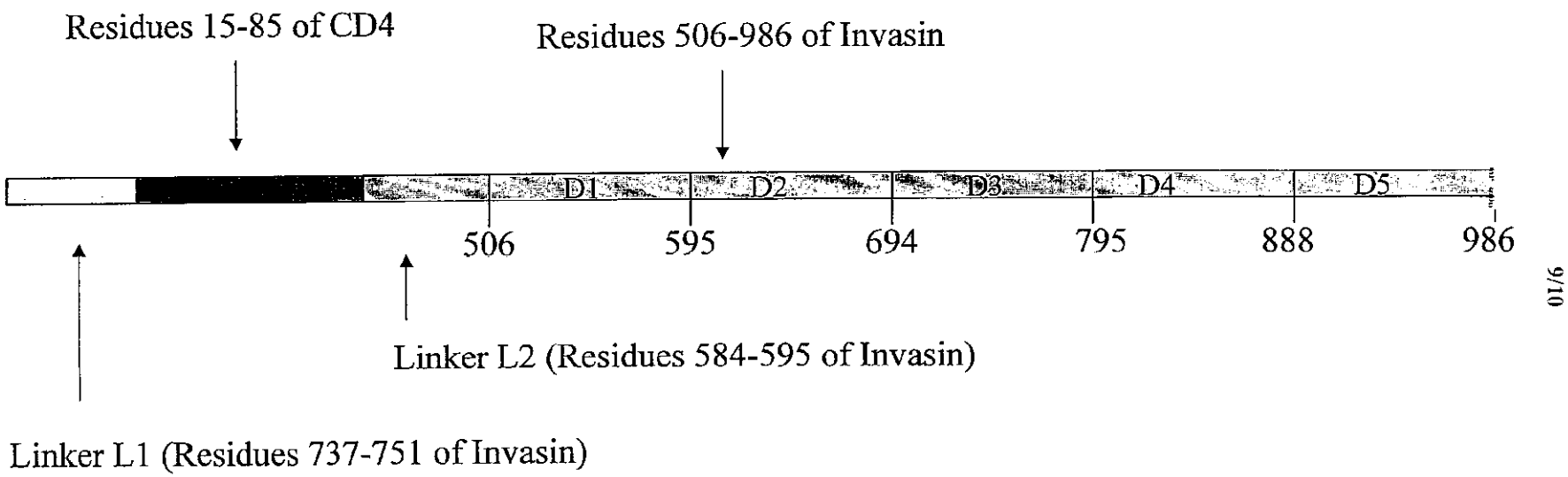

Residues 15-85 of CD4
Residues 506-986 of Invasin
D1
D2
D3
D4
D5
506
595
694
795
888
986
Linker L2 (Residues 584-595 of Invasin)
Linker L1 (Residues 737-751 of Invasin)

FIG. 8: Invasin-CD4 Constructs

