

b) CD4-10-17b CAR includes the following features:

	a.a. #	functional elements
CD4 segment	1-208;	<u>signal peptide</u> , <u>D1D2</u>
10 a.a. linker	209-218;	(G4S) ₂
17b scFv	219-470;	V _H , (G4S) ₃ , V _L
spacer	471-473;	AAA tripeptide
CD28 segment	474-580;	<u>extracellular hinge</u> , <u>TM</u> , intracellular signaling
CD3-zeta segment	581-692;	intracellular signaling

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MVRGVPFRHLLLVLQLALLPAATQGKKVVLGKKGDTVELTCTASQKKSIQ
FHWKNSNQIKILGNQGSFLTTKGPSKLNDRADSRRLWDQGNFPLIIKNLK
IEDSDTYICEVEDQKEEVQLLVFGLTANSDTHLLQGQSLTTLTLESPPGSS
PSVQCRSPRGKNIQGKTLSVSQLELQDSGTWTCTVLQNQKKVEFKIDIV
VLAFQKASGGGGSGGGGSQVQLLESGAEVKKPGSSVKVSCKASGDTFIRY
SFTWVRQAPGGGLEWMGRIITILDVAHYAPHLQGRVTITADKSTSTVYLE
LRNLRSDDTAVYFCAGVYEGEADEGEYDNNGFLKHWGQGTLVTVTSGGGG
SGGGGSGGGGSELELTQSPATLSVSPGERATLSCRASESVSSDLAWYQQK
PGQAPRLLIYGASTRATGVPARFSGSGSGAEFTLTISLQSEDFAVYYCQ
QYNNWPPRYTFGQGTRLEIKAAAIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSD
YMNMTPRRPGPTRKHYPYAPPRDFAAYRSRVKFSRSADAPAYQQGQNQL
YNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEA
YSEIGMKGERRRGKGHDGLYQGLSTATKDTYDALHMQUALPPR

c) The CD4 CAR includes the following features:

	a.a. # functional elements
CD4 segment	1-208; <u>signal peptide</u> , D1D2
spacer	209-211; AAA tripeptide
CD28 segment	212-318; <u>extracellular hinge</u> , <u>TM</u> , intracellular signaling
CD3-zeta segment	319-430; intracellular signaling

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MVRGVPFRHLLLVLQLALLPAATQGKKVVLGKKGDTVELTCTASQKKSIQ
FHWKNSNQIKILGNQGSFLTKGPSKLNDRADSRRSLWDQGNFPLIIKNLK
IEDSDTYICEVEDQKEEVQLLVFGLTANSDTHLLQGQSLTLTLESPPGSS
PSVQCRSPRGKNIQGGKTLSVSQLELQDSGTWTCTVLQNQKKVEFKIDIV
VLAFQKASAAAIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLFPGPSKP
FWLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPT
RKHYQPYAPPRDFAAYRSRVKFSRSADAPAYQQGQNQLYNELNLGRREEY
DVLDKRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEAYSEIGMKGERR
GKGHDGLYQGLSTATKDTYDALHMQALPPR

d) The CD4-35-DDY3 CAR includes the following features:

	a.a. # functional elements
CD4 segment	1-208; <u>signal peptide, D1D2</u>
35 a.a. linker	209-243; (G4S) ₇
DDY scFv	244-486; V_H , (G4S) ₃ , V_L
spacer	487-489; AAA tripeptide
CD28 segment	490-593; <u>extracellular hinge, TM</u> , intracellular signaling
CD3-zeta segment	594-708; intracellular signaling

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MVRGVPFRHLLLVLQLALLPAATQGKKVVLGKKGDTVELTCTASQKKSIQ
FHWKNSNQIKILGNQGSFLTKGPSKLNDRADSRRLWDQGNFPLIIKNLK
IEDSDTYICEVEDQKEEVQLLVFGLTANSDTHLLQGQSLTTLTLESPPGSS
PSVQCRSPRGKNIQGKTLSVSQLELQDSGTWTCTVLQNQKKVEFKIDIV
VLAFQKASGGGGSGGGGSGGGGSGGGGSGGGGSGGGGSGGGGSEVQLVQS
GAEVKKPGATVKISCKVSGYTFDYYMHVWVQQAPGKGLEWMGLVDPEDGE
TIYAEKFQGRVTITADTSTDTAYMELSSLRSEDTAVYYCATERTDYWGQG
TLVTVSSGGGGSGGGGSGGGGSEIVLTQSPLSLSVTPGEPASISCRSSQS
LLDSDDGNTYLDWYLQKPGQSPQLLIYEVSNRFSGVPDRFSGSGSGTDFT
LKISRVEAEDVGVYYCMQSIQLPWTFGQGTKLEIKRAAAIEVMYPPPYLD
NEKSNGTIIHVKGKHLCPSPLPFGPSKPFWVLVVVGGVLACYSLLVTVAE
IIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRSRVKF
SRSADAPAYQQGQNQLYNELNLGRREEYDVLDKRRGRDPEMGGKPRRKNP
QEGLYNELQKDKMAEAYSEIGMKGERRRGKGHDGLYQGLSTATKDTYDAL
HMQUALPPR

e) The 139 CAR includes the following features:

	a.a. #	functional elements
signal peptide	<u>1-22;</u>	
139 scFv	23-262;	V_H , “128 linker”, V_L
spacer	263-265;	AAA tripeptide
CD28 segment	266-372;	extracellular hinge , TM , intracellular signaling
CD3-zeta segment	373-484;	intracellular signaling

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MVLLVTSLLLCELPHPAFLLI**PD****IQMTQSPSSLSASVGD****RV****TTITCRASQ**
IRNNLAWYQQKPGKAPKRLIYAASN**LQSGVPSRFTGSGSGTEFTLIVSSL**
QPEDFATYYCLQHHSYPLTSGGGTKVEIKRTG**STSGSGKPGSGEGSEVQV**
LESGGGLVQPGGSLRLSCAASGFTFSSYAMSWVRQAPGKGLEWVSAISGS
GGSTNYADSVKGRFTISRDN**SKNTLYLQMNSLRAEDTAVYYCAGSSGWSE**
YWGQGLVTVSSAAAIEVMYPPPYLDNEKSNGTIIHVKGKHLCP**SPLFPG**
PSKPFWLVVVGGLACYSLLVTVAFIIFWVRSKR**SRL****LHSDYMNMT****PRR**
PGPTRKHYQPYAPPRDFAAYRSRVKFSRSADAPAYQQGQNQLYNELNLGR
REEYDVL**DKRRGRDPEMGGKPRRKNPQEGLYNELQKDKMAEAYSEIGMKG**
ERRRGKGHDGLYQGLSTATKDTYDALHMQALPPR