

**Supplementary Table S1.** Amino acid sequences of antibody constructs

(Anti-CD3ε in gray and anti-IgE variable domains in black (blinatumomab), red (omalizumab), blue (8D6), green (ligelizumab), orange (MEDI 4212) and purple (quilizumab). Short linker is underlined with full line and long linker with dotted line)

Amino acid sequences of antibody constructs
<b>Blinatumomab</b> DIQLTQSPASLAVSLGQRATISCKASQSVDYDGD SYLNWYQQIPGQPPKLLIYDASNLVSGIPPRFSGSGSGTDFTLNI HPVEKVDAATYHCQQSTEDPWTFGGG TKLEIKGGGGSGGGSGGGGSQVQLQQSGAELVRPGSSVKISCKASGYA FSSYWMNWVKQRPGQGLEWIGQIWP GDGDTNYNGKFKGKATLTADESSSTAYMQLSSLASEDSAVYFCARRETT TVGRYYYAMDYWGQGT TVTVSSGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWWVKQRPGQGLE WIGYINPSRGYTNYNQKFKDKATLT TDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGG SGSGSGSGSGGVDDIQLTQSPA IMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYR F SGSGSGTSYSLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSS TGH HHHHHHHHG
<b>Omalizumab BiTE</b> DIQLTQSPSSLSASVGDRVTITCRASQSVDYDGD SYMNWYQQKPGKAPKLLIYAASYLESGVPSRFSGSGSGTDFTLTI SSLQPEDFATYYCQQSHEDPYTFGCGTKVEIKGGGGSGGGSGGGGSQVQLVESGGGLVQP GGSRLRLSCAVSGSYIT SGYSWNWIRQAPGKCLEWVASITYD GSTNYNPSVKGRITISRDDSKNTFYLMNSLRAEDTAVYYCARGSHYFGH WHFAVWGQGT LTVTVSSGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWWVKQRPGQGLEWIGYIN PSRGYTNYNQKFKDKATLT TDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGGSGGGSG GSGSGSGGVDDIQLTQSPA IMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYRFSGSGS GTSYSLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSS TGH HHHHHHHHG
<b>8D6 BiTE</b> DIVLTQSPASLAVSLGQRATISCKASQSVDYDGD TYMNWYHQKPGQPPKLLIYAASNLDSGIPARFSGSGSGTDFTL NIHPVEEEDAATYYCQQTNEDPWTFGGG TKLEIKGGGGSGGGSGGGGSQVQLQQSGAELAKPGASVMLSCKAS GYTFNGYWMHWWVKQRPGQDLEWIGYINPTTGHT EYNQKFKDKATLTADESSNTAYIELSSLTSDDSAVYYCARQEY RHSWFAYWGQGT LTVTVSAGGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWWVKQRPGQGLEWIGYI NPSRGYTNYNQKFKDKATLT TDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGGSGGGSG GGSGSGGVDDIQLTQSPA IMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYRFSGSGS SGTSYSLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSS TGH HHHHHHHHG
<b>Ligelizumab BiTE</b> EIVMTQSPATLSVSPGERATLSCRASQSIGTNIHWYQQKPGQAPRLIIYASESISGIPARFSGSGSGTEFTLTISLQSE DFAVYYCQQSWSWPTTFGGG TKVEIKGGGGSGGGSGGGGSQVQLVQSGAEVMKPGSSVKVSCKASGYTFSWY WLEWVRQAPGHGLEWMGEIDPGTFTTNYNEKFKARVFTADTSTSTAYMELSSLRSEDTAVYYCARFSHFSGSNYD YFDYWGGQGT LTVTVSSGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWWVKQRPGQGLEWIGYINPSR GYTNYNQKFKDKATLT TDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGGSGGGSGG GSGGVDDIQLTQSPA IMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYRFSGSGSGTSY SLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSS TGH HHHHHHHHG
<b>MEDI4212 BiTE</b> QSVLTQPPSVSGAPGQRVTISCTGSSSNIGAGYDVHWYQQLPGTAPKLLIYDNFNRP SGVPDRFSGSKSGTSASLAIT GLQAEDEADYYCQSYDSP TLTSPFGTGKLTVLGGGGSGGGSGGGGSQVQLVQSGAEVKKPGATVKISKVYGYIF TDYNIYWVRQAPGKGLEWMGLIDPDNGETFYAEKFQGRATMTADTSSDRAYMELSSLRFEDTAVYYCATVMGKW IKGGYDYWGRGTLTVTVSSGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWWVKQRPGQGLEWIGYIN PSRGYTNYNQKFKDKATLT TDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGGSGGGSG GSGGVDDIQLTQSPA IMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYRFSGSGS GTSYSLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSS TGH HHHHHHHHG
<b>Quilizumab BiTE</b>

DIQMTQSPSSLSASVGDRVITICRSSQSLVHNNANTYLHWYQQKPGKAPKLLIYKVSNRFSGVPSRFSGSGSGTDFTL  
TISSLQPEDFATYYCSQNTLVPWTFGQGTKVEIKGGGSGGGGSGGGGSEVQLVESGGGLVQPGGSLRLSCAASGF  
TFSDYGIAWVRQAPGKGLEWVAFISDLAYTIYYADTVTGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCARDNWD  
A MDYWGQGTLVTVSSGGGSDIKLQQSGAELARPGASVKMSCKTSGYTFTRYTMHWVKRPGQGLEWIGYINPSR  
GYTNYNQKFKDKATLTDDKSSSTAYMQLSSLTSEDSAVYYCARYYDDHYCLDYWGQGTTLTVSSVEGGSGGSGGSG  
GSGGVDDIQLTQSPAIMSASPGEKVTMTCRASSSVSYMNWYQQKSGTSPKRWIYDTSKVASGVPYRFSGSGSGTSY  
SLTISSMEAEDAATYYCQQWSSNPLTFGAGTKLELKGSSSTGHHHHHHHGG

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Quilizumab – full length IgG

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Heavy chain:

EVQLVESGGGLVQPGGSLRLSCAASGFTFSYDYGIAWVRQAPGKGLEWVAFISDLAYTIYYADTVTGRFTISRDN SKNT  
LYLQMNSLRAEDTAVYYCARDNWDAMDYWGQGTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEP  
VTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPA  
PELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTV  
LHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNG  
QPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK

Light Chain:

DIQMTQSPSSLSASVGDRVITICRSSQSLVHNNANTYLHWYQQKPGKAPKLLIYKVSNRFSGVPSRFSGSGSGTDFTL  
TISSLQPEDFATYYCSQNTLVPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVD  
NALQSGNSQESVTEQDSKDYSLSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

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