

**Supplemental Table 1.** Genetic characteristics of anti-LukAB antibodies

mAb	Isotype	EC <sub>50</sub> <sup>1</sup> (µg/mL)	Heavy chain										Light chain						
			V gene	J gene	D gene	Number of AA in			HCDR3 AA sequence	Nt mutations	AA mutations	V gene	J gene	Number of AA in			LCDR3 AA sequence	Nt mutations	AA mutations
						CDR1	CDR2	CDR3						CDR1	CDR2	CDR3			
SA-13	IgG2, λ	0.8	3-11*01	3*02	2-15*01	8	8	17	CARDGVGGPRARYDAFDIW	19	11	#							
SA-15	IgG1, κ	1.5	3-30*03	3*02	6-13*01	8	8	14	CVKVGWTLVGDGVDMMW	27	20	KV1-27*01	KJ3*01	6	3	9	CQKYNGAPPTF	19	8
SA-17	IgG1, λ	0.3	3-43D*01	1*01	5-18*01	8	8	18	CARDIKIGEAVMITVPGQHW	23	17	KV1-39*01	KJ2*01	6	3	9	CQESSNTPPTF	16	11
SA-22	IgG1, κ	--	V3-53*01	4*02	4-17*01	8	7	12	CAREDSVDGYFDYW	22	13	LV3-19*01	LJ2*01	6	3	11	CNSRDSSGNHVVF	15	12

SA-13 was obtained from acute sample, while SA-15 and SA-17 were obtained from the convalescent sample.

<sup>1</sup>EC50 values were obtained in ELISA with LukAB as the antigen. SA-22 was obtained from the same patient, but recognizes IsdA, another *S. aureus* protein.

# We were not able to obtain the sequence of variable domain of the light chain.

Nt = nucleotide; AA = amino acid; CDR = Complementarity Determining Region