

**Table S1. PfEMP1 variants and epitopes evaluated in this study.**

UID	PfEMP1	Genome	Domain Class	PfEMP1 group	Domain cassette
GK2_39	PF11_0521	3D7	CIDR $\alpha$ 1.4	A	13
2324_63	PFD0020c	3D7	DBL $\gamma$ 6	A	8
2122_77	PFD0020c	3D7	DBL $\beta$ 12	A	8
3028_48	PFI1820w	3D7	DBL $\alpha$ 1.3-DBL $\epsilon$ 8	A	3
127128_76	PFE1640w	3D7	DBL $\beta$ 1	A	1
GK26_59	PFL2665c	3D7	CIDR $\alpha$ 2.3	C	Type 1
199200_90	IT4_var2	3D7	CIDR $\delta$ 1	A	16
GK28_57	MAL6P1.1	3D7	CIDR $\alpha$ 4	B	Type 1
GK23_60	PFL0005w	3D7	CIDR $\alpha$ 2.2	B	Type 1
GK25_41	PFC0005w	3D7	CIDR $\alpha$ 2.4	B	Type 1
129130_67	PFE1640w	3D7	DBL $\gamma$ 15	A	1
VAR5CIDR_37	PF11_0008	3D7	CIDR $\beta$ 4	A	5
155156_65	MAL6P1.316	3D7	DBL $\zeta$ 3	BA	12
189190_51	IT4var21	FCR3	CIDR $\alpha$ 3.1	B	Type 1
167168_61	HB3var22	HB3	DBL $\epsilon$ 2	BA	7
8788_52	PFD0005w	3D7	DBL $\delta$ 1	B	None
SM1112_58	PFL1955w	3D7	CIDR $\alpha$ 3.4	B	19
GK17_40	PFD0005w	3D7	CIDR $\alpha$ 2.10	B	Type 1
6970_73	MAL6P1.4	3D7	DBL $\epsilon$ 2	BA	7
5556_43	PFL0020w	3D7	DBL $\epsilon$ 4	BA	6
E22-3_55	PF11_0008	3D7	DBL $\delta$ 5	A	5
D20-24_42	PF11_0008	3D7	DBL $\gamma$ 12	A	5
179180a_46	PFD0615c	3D7	DBL $\delta$ 1	C	Type 1
733_92	PF13_0003	3D7	CIDR $\delta$ 1	A	16
660C_68	PFD1235w	3D7	DBL $\gamma$ 13	A	None
171174_34	MAL6P1.316	3D7	DBL $\gamma$ 4	BA	6/8
5354_64	PFL0020w	3D7	DBL $\zeta$ 5	BA	6
6768_89	MAL6P1.4	3D7	CIDR $\gamma$ 1	BA	43
6566_36	MAL6P1.4	3D7	DBL $\delta$ 4	BA	None
6162_69	MAL6P1.4	3D7	DBL $\beta$ 5	BA	14
GK37_49	PF08_0103	3D7	CIDR $\alpha$ 2.2	B	Type 1
1516_75	PF08_0141	3D7	DBL $\zeta$ 5	A	6
1112_74	PF08_0141	3D7	DBL $\beta$ 6	A	None
1314_66	PF08_0141	3D7	DBL $\gamma$ 14	A	6
101102_33	PF07_0049	3D7	DBL $\delta$ 1	C	Type 1
2928_85	MAL6P1.314	3D7	VAR3/type3	A	3
7374_38	MAL6P1.4	3D7	DBL $\epsilon$ 3	BA	7
6364_84	MAL6P1.4	3D7	DBL $\gamma$ 13	BA	None
GK34_50	PFL1955w	3D7	CIDR $\alpha$ 3.4	B	19
7172_72	MAL6P1.4	3D7	DBL $\epsilon$ 7	BA	7
4344_53	PF08_0140	3D7	CIDR $\alpha$ 1.6	BA	None
3738_56	PF08_0140	3D7	DBL $\beta$ 12	BA	8
2728_62	PFA0015c	3D7	DBL $\alpha$ 1.3-DBL $\epsilon$ 8	A	3
P310_54	PFD1235w	3D7	CIDR $\alpha$ 1.6	A	4
P308_47	PFD1235w	3D7	DBL $\gamma$ 13	A	none