

Common name	Residue on alignment	O	A	C	Asia1	SAT1	SAT2	SAT3	count	Serotypes
VP2 67	152	VP2 67	VP2 67	VP2 67	VP2 67	VP2 67	VP2 67	VP2 67	1	Asia1 ¹
VP2 70	155	VP2 70	VP2 70	VP2 70	VP2 70	VP2 70	VP2 70	VP2 70	2	O ^{2,3}
VP2 71	156	VP2 71	VP2 71	VP2 71	VP2 71	VP2 71	VP2 71	VP2 71	1	O ³
VP2 72	157	VP2 72	VP2 72	VP2 72	VP2 72	VP2 72	VP2 72	VP2 72	8	O ³⁻⁵ Asia1 ¹ SAT1 ^{6*} C ⁷ A ⁸
VP2 73	158	VP2 73	VP2 73	VP2 73	VP2 73	VP2 73	VP2 73	VP2 73	3	O ³⁻⁵
VP2 74	159	VP2 74	VP2 74	VP2 74	VP2 74	VP2 74	VP2 74	VP2 74	4	C ^{2,7} Asia1 ¹ O*
VP2 75	160	VP2 75	VP2 75	VP2 75	VP2 75	VP2 75	VP2 75	VP2 75	1	O ³
VP2 77	162	VP2 77	VP2 77	VP2 77	VP2 77	VP2 77	VP2 77	VP2 77	3	O ^{2,3} Asia1 ¹
VP2 78	163	VP2 78	VP2 78	VP2 78	VP2 78	VP2 78	VP2 78	VP2 78	1	O ⁹
VP2 79	164	VP2 79	VP2 79	VP2 79	VP2 79	VP2 79	VP2 79	VP2 79	6	A ^{2,8} C ^{2,7} Asia1 ¹ SAT2 ⁶
VP2 80	165	VP2 80	VP2 80	VP2 80	VP2 80	VP2 80	VP2 80	VP2 80	1	A ¹⁰
VP2 82	167	VP2 82	VP2 82	VP2 82	VP2 82	VP2 82	VP2 82	VP2 82	1	A ¹¹
VP2 88	173	VP2 88	VP2 88	VP2 88	VP2 88	VP2 88	VP2 88	VP2 88	1	A ¹¹
VP2 130	215	VP2 130	VP2 130	VP2 130	VP2 130	VP2 130	VP2 130	VP2 130	1	O ¹²
VP2 131	216	VP2 131	VP2 131	VP2 131	VP2 131	VP2 131	VP2 131	VP2 131	1	O ³
VP2 133	218	VP2 133	VP2 133	VP2 133	VP2 133	VP2 133	VP2 133	VP2 133	2	O ^{2,5}
VP2 134	219	VP2 134	VP2 134	VP2 134	VP2 134	VP2 134	VP2 134	VP2 134	2	O ^{2,13}
VP2 190	275	VP2 188	VP2 188	VP2 188	VP2 188	VP2 188	VP2 188	VP2 188	1	O ⁹
VP2 193	278	VP2 191	VP2 191	VP2 191	VP2 191	VP2 191	VP2 191	VP2 191	1	O*
VP2 194	279	VP2 191	VP2 191	VP2 191	VP2 191	VP2 192	VP2 192	VP2 192	1	O*

Table S3: (a) Residues identified as part of epitopes on structural protein VP2 across the six tested serotypes of FMDV, along with corresponding positions on all serotypes. * Identified as antigenically important for neutralisation in this study.

Common name	Residue on alignment	O	A	C	Asia1	SAT1	SAT2	SAT3	count	Serotypes
VP3 56	362	VP3 56	VP3 56	VP3 56	VP3 56	VP3 56	VP3 56	VP3 55	2	O ^{3*}
VP3 58	364	VP3 58	VP3 58	VP3 58	VP3 58	VP3 58	VP3 58	VP3 57	9	A ^{2,10} O ^{2-4,9} C ^{2,7} Asia1 ¹
VP3 59	365	VP3 59	VP3 59	VP3 59	VP3 58	VP3 58	VP3 58	VP3 57	2	Asia1 ¹ A ¹⁰
VP3 60	366	VP3 60	VP3 60	VP3 59	VP3 59	VP3 59	VP3 59	VP3 58	1	Asia1 ¹
VP3 61	367	VP3 61	VP3 61	VP3 60	VP3 60	VP3 60	VP3 60	VP3 59	1	A ¹⁰
VP3 71	377	VP3 70	VP3 70	VP3 69	VP3 69	VP3 70	VP3 69	VP3 69	1	A ¹⁰
VP3 72	378	VP3 71	VP3 71	VP3 70	VP3 70	VP3 71	VP3 70	VP3 70	2	SAT1 ^{6*}
VP3 77	383	VP3 76	VP3 76	VP3 75	VP3 75	VP3 76	VP3 75	VP3 75	2	SAT1 ^{6*}
VP3 138	444	VP3 134	VP3 135	VP3 133	VP3 133	VP3 135	VP3 136	VP3 134	2	SAT1 ^{6*}
VP3 142	448	VP3 138	VP3 139	VP3 137	VP3 137	VP3 139	VP3 140	VP3 138	1	A ¹⁰
VP3 177	483	VP3 173	VP3 174	VP3 172	VP3 172	VP3 174	VP3 175	VP3 173	1	O ¹²
VP3 178	484	VP3 174	VP3 175	VP3 173	VP3 173	VP3 175	VP3 176	VP3 174	1	A ¹⁴
VP3 181	487	VP3 177	VP3 178	VP3 176	VP3 176	VP3 178	VP3 179	VP3 177	1	A ¹⁴
VP3 198	504	VP3 194	VP3 195	VP3 193	VP3 193	VP3 195	VP3 196	VP3 194	1	A ¹⁰
VP3 223	529	VP3 219	VP3 220	VP3 218	VP3 218	VP3 220	VP3 221	VP3 219	1	Asia1 ¹

Table S3: (b) Residues identified as part of epitopes on structural protein VP3 across the six tested serotypes of FMDV, along with corresponding positions on all serotypes. * Identified as antigenically important for neutralisation in this study.

Common name	Residue on alignment	O	A	C	Asia1	SAT1	SAT2	SAT3	count	Serotypes
VP1 44	574	VP1 43	VP1 43	VP1 43	VP1 43	VP1 43	VP1 42	VP1 43	3	O ^{3,4,13}
VP1 45	575	VP1 44	VP1 44	VP1 44	VP1 44	VP1 44	VP1 43	VP1 44	2	O ^{3,4}
VP1 46	576	VP1 44	VP1 44	VP1 44	VP1 44	VP1 45	VP1 44	VP1 45	2	O ^{3,4}
VP1 47	577	VP1 45	VP1 45	VP1 45	VP1 45	VP1 46	VP1 45	VP1 46	1	O ³
VP1 48	578	VP1 46	VP1 46	VP1 46	VP1 46	VP1 47	VP1 46	VP1 47	1	O ⁹
VP1 50	580	VP1 48	VP1 48	VP1 48	VP1 48	VP1 49	VP1 48	VP1 48	1	O ¹³
VP1 114	644	VP1 110	VP1 110	VP1 110	VP1 110	VP1 111	VP1 110	VP1 110	1	SAT1 ⁶
VP1 140	670	VP1 136	VP1 136	VP1 136	VP1 136	VP1 137	VP1 136	VP1 136	1	A ¹⁵
VP1 141	671	VP1 137	VP1 136	VP1 136	VP1 137	VP1 138	VP1 137	VP1 137	1	A ¹⁵
VP1 142	672	VP1 138	VP1 137	VP1 137	VP1 138	VP1 139	VP1 138	VP1 138	1	O*
VP1 143	673	VP1 139	VP1 138	VP1 138	VP1 139	VP1 140	VP1 138	VP1 138	3	C ^{16,17} A ¹⁵
VP1 144	674	VP1 140	VP1 139	VP1 139	VP1 140	VP1 141	VP1 139	VP1 139	5	C ^{7,16} Asia1 ¹ SAT1 ^{6*}
VP1 145	675	VP1 141	VP1 140	VP1 140	VP1 141	VP1 142	VP1 140	VP1 140	2	A ¹⁵ Asia1 ¹
VP1 146	676	VP1 142	VP1 141	VP1 141	VP1 141	VP1 143	VP1 141	VP1 141	2	A ¹⁸ Asia1 ¹
VP1 147	677	VP1 143	VP1 142	VP1 141	VP1 141	VP1 144	VP1 141	VP1 142	2	A ¹⁵ Asia1 ¹
VP1 148	678	VP1 143	VP1 142	VP1 141	VP1 141	VP1 145	VP1 141	VP1 143	2	A ¹⁵ Asia1 ¹
VP1 149	679	VP1 143	VP1 142	VP1 141	VP1 141	VP1 146	VP1 141	VP1 143	4	A ¹⁵ Asia1 ¹ SAT1 ^{6*}
VP1 150	680	VP1 143	VP1 142	VP1 141	VP1 141	VP1 147	VP1 142	VP1 144	2	A ¹⁵ Asia1 ¹
VP1 151	681	VP1 144	VP1 143	VP1 141	VP1 142	VP1 148	VP1 143	VP1 145	6	A ^{10,18+} O ^{3,19,20} Asia1 ¹
VP1 153	683	VP1 146	VP1 145	VP1 142	VP1 144	VP1 150	VP1 145	VP1 147	2	O ²¹ A ¹⁰⁺
VP1 155	685	VP1 148	VP1 147	VP1 144	VP1 146	VP1 152	VP1 147	VP1 149	7	A ^{10,15,18+} O ^{3,4,19,20}
VP1 156	686	VP1 149	VP1 148	VP1 145	VP1 147	VP1 153	VP1 148	VP1 150	4	A ^{10,15,18+} O ⁴
VP1 157	687	VP1 150	VP1 149	VP1 146	VP1 148	VP1 154	VP1 149	VP1 151	3	C ^{7,16} SAT2 ²²
VP1 158	688	VP1 151	VP1 150	VP1 147	VP1 149	VP1 155	VP1 150	VP1 152	2	C ¹⁷ A ¹⁰⁺
VP1 159	689	VP1 152	VP1 151	VP1 148	VP1 150	VP1 156	VP1 151	VP1 153	4	C ²³ A ^{10,14,15+}
VP1 160	690	VP1 153	VP1 152	VP1 149	VP1 151	VP1 157	VP1 152	VP1 154	4	A ^{10,14,15+} C ⁷
VP1 161	691	VP1 154	VP1 153	VP1 150	VP1 152	VP1 158	VP1 153	VP1 155	4	C ¹⁶ O ^{3,19} A ¹⁰⁺
VP1 162	692	VP1 155	VP1 154	VP1 151	VP1 153	VP1 159	VP1 154	VP1 156	2	SAT2 ⁶ A ¹⁰⁺
VP1 164	694	VP1 157	VP1 156	VP1 153	VP1 155	VP1 161	VP1 156	VP1 158	2	SAT2 ²² SAT1*
VP1 165	695	VP1 157	VP1 156	VP1 153	VP1 155	VP1 161	VP1 156	VP1 159	2	SAT2 ²² SAT1*
VP1 167	697	VP1 157	VP1 156	VP1 153	VP1 155	VP1 163	VP1 158	VP1 161	1	SAT2 ²²
VP1 169	699	VP1 158	VP1 157	VP1 154	VP1 156	VP1 164	VP1 160	VP1 163	1	O*

Common name	Residue on alignment	O	A	C	Asia1	SAT1	SAT2	SAT3	count	Serotypes
VP1 182	712	VP1 171	VP1 170	VP1 167	VP1 169	VP1 177	VP1 173	VP1 176	1	A ¹⁰
VP1 184	714	VP1 173	VP1 172	VP1 169	VP1 171	VP1 179	VP1 175	VP1 177	1	SAT1 ⁶
VP1 185	715	VP1 174	VP1 173	VP1 170	VP1 172	VP1 180	VP1 176	VP1 178	1	A ¹⁴
VP1 186	716	VP1 175	VP1 174	VP1 171	VP1 173	VP1 181	VP1 177	VP1 179	1	SAT1 ⁶
VP1 209	739	VP1 196	VP1 196	VP1 192	VP1 194	VP1 204	VP1 200	VP1 202	1	SAT1*
VP1 210	740	VP1 197	VP1 197	VP1 193	VP1 195	VP1 205	VP1 201	VP1 202	2	C ^{2,7}
VP1 211	741	VP1 198	VP1 198	VP1 194	VP1 196	VP1 206	VP1 202	VP1 203	4	C ²³ O ^{5*} A ⁸
VP1 214	744	VP1 201	VP1 201	VP1 197	VP1 199	VP1 209	VP1 205	VP1 206	1	A ¹⁴
VP1 216	746	VP1 203	VP1 203	VP1 199	VP1 201	VP1 211	VP1 206	VP1 208	1	A ²⁴
VP1 218	748	VP1 205	VP1 205	VP1 201	VP1 203	VP1 213	VP1 208	VP1 210	1	A ¹⁰⁺
VP1 219	749	VP1 206	VP1 206	VP1 202	VP1 204	VP1 214	VP1 209	VP1 211	1	O ²¹
VP1 220	750	VP1 207	VP1 207	VP1 203	VP1 205	VP1 215	VP1 210	VP1 212	2	O ²¹ SAT2 ⁶
VP1 221	751	VP1 208	VP1 208	VP1 204	VP1 206	VP1 216	VP1 211	VP1 213	1	O ¹⁹
VP1 222	752	VP1 209	VP1 209	VP1 205	VP1 207	VP1 217	VP1 212	VP1 214	1	A ¹⁴

Table S3: (c) Residues identified as part of epitopes on structural protein VP1 across all seven serotypes of FMDV, along with corresponding positions on other serotypes. * Identified as antigenically important for neutralisation in this study. + A₁₀₆₁ has a deletion at residue 677 on this alignment. Serotype A numbering is relative to the other serotype A viruses without the deletion.

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