

Supplementary Material

# Association of porcine Swine Leukocyte Antigen (SLA) haplotypes with B- and T-cell immune response to foot-and-mouth disease virus (FMDV) peptides

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**Short Title:** FMDV-MHC correlations in pigs.

**Table S1.** SLA-I and SLA-II allele-groups and Low-resolution Haplotypes in the cohort of 73 studied pigs.

SLA class I (SLA-I)					SLA class II (SLA-II)				
SLA-1	SLA-3	SLA-2	Lr-Hp <sup>1</sup>	Animal number	DRB1	DQB1	DQA	Lr-Hp <sup>1</sup>	Animal number
01XX	01XX	01XX	1.0	Sw01,04,05,07,08,09,11,12,15,23,24,27,29,33,35,44,45,46,47,48,50,51,52,72	01XX	01XX	01XX	0.1	Sw05,08,15,23,24,27,33,35
04XX	04XX	04XX	4.0	Sw18,20,21,22,25,26,27,30	02XX	02XX	02XX	0.2	Sw72
08XX	06XX	05XX	6.0	Sw15,16,19,20,26	02XX	04XX	02XX	0.4	Sw01,09,18
08XX	07XX	05XX	7.0	Sw54,59	05XX	02XX	02XX	0.5	Sw14,16,17,21,22
01XX,09XX	07XX	05XX	11.0	Sw31	05XX	08XX	01XX	0.6	Sw53
08XX	06XX	12XX	22.0	Sw03,04,12,13,14,28,31,32,34,38,39,40,41,42,43,46,47,50,51,54,55,56,57,58,59,63,64,73	09XX	04XX	03XX	0.11	Sw31
Blank <sup>2</sup>	04XX	06XX	24.0	Sw19,28	04XX	03XX	02XX	0.13	Sw61
09XX,15XX	07XX	05XX	28.0	Sw17	04XX	02XX	02XX	0.15b	Sw03,04,05,08,12,13,14,15,16,19,20,26,32,33,34,36,37,38,39,40,41,42,43,45,46,47,48,49,50,51,54,55,56,57,58,59,60,62,63,64,65,66,67,68,69,70,71,72,73
Blank <sup>2</sup>	05XX	09XX	29.0	Sw60,68,69,70,71	01XX	05XX	04XX	0.21	Sw54,59,64
Blank <sup>2</sup>	05XX	06XX	33.0	Sw17	06XX	02XX	02XX	0.22	Sw25,27,28
07XX	05XX	09XX	37.0	Sw02,05,06,07,08,10,11,13,32,33,34,36,37,38,40,48,49,55,56,60,61,62,65,66,67,68,69,70,71,72,73	10XX	06XX	01XX	0.23	Sw17,19,20,21,25,29,30,31
12XX	04XX	06XX	46.0	Sw16	07XX	02XX	02XX	0.24	Sw02,06,07,10,11,12,68,69
15XX	04XX	11:04	55.0	Sw14,53	13XX	09XX	04XX	0.25	Sw60,66,71
02XX	01XX	11XX	57.0	Sw02,10	09XX	09XX	04XX	0.27	Sw01,04,06,09,13,18,22,23,24,26,28,29,30,35,39,41,42,43,44,45,49,52,53,57,58,61,63,65,67
11XX	05XX	16:02	59.0	Sw01,03,06,09,18,21,22,23,24,25,29,30,35,39,41,42,43,44,45,49,52,53,57,58,61,62,63,64,65,66,67	11XX	02XX	02XX	0.33	Sw02,10
					Blank <sup>2</sup>	02XX	02XX	LWLR-1	Sw44,52

<sup>1</sup> Low-resolution Haplotype. <sup>2</sup> Untyped SLA class I or class II locus.

**Table S2.** SLA-I and SLA-II Low-resolution Haplotypes of 73 pigs and their antibody and cellular responses to dendrimeric peptides.

Vaccine	Animal number	Low-resolution Haplotype		Antibody response		T-cell response	
		SLA-I <sup>1</sup>	SLA-II <sup>1</sup>	Antibody (0-5) <sup>2</sup>	Antibody (log <sub>10</sub> )	IFN- $\gamma$ (0-3) <sup>3</sup>	IFN- $\gamma$ spots/10 <sup>6</sup> PBMCs
<b>B<sub>2</sub>T-3A (n=28)</b>	Sw01	59.0/1.0	0.27/0.4	2	1.7	3	183.2
	Sw02	57.0/37.0	0.24/0.33	1	0.9	2	103.2
	Sw03	22.0/59.0	0.15b/0.15b	1	1.0	3	142.7
	Sw04	1.0/22.0	0.15b/0.27	1	1.2	0	36.3
	Sw17	33.0/28.0	0.23/0.5	3	2.3	1	72.0
	Sw18	59.0/4.0	0.27/0.4	4	2.6	0	41.3
	Sw19	6.0/24.0	0.15b/0.23	5	3.0	2	102.7
	Sw26	6.0/4.0	0.15b/0.27	4	2.4	1	86.7
	Sw27	1.0/4.0	0.1/0.22	3	2.3	2	120.0
	Sw29	59.0/1.0	0.27/0.23	3	2.1	1	69.3
	Sw32	22.0/37.0	0.15b/0.15b	2	1.7	1	55.3
	Sw33	1.0/37.0	0.1/0.15b	3	2.3	0	17.0
	Sw34	22.0/37.0	0.15b/0.15b	2	1.6	3	207.7
	Sw35	59.0/1.0	0.1/0.27	3	2.3	1	67.7
	Sw36	37.0/37.0	0.15b/0.15b	2	1.6	0	8.3
	Sw37	37.0/37.0	0.15b/0.15b	1	1.3	3	174.0
	Sw38	22.0/37.0	0.15b/0.15b	2	1.5	0	2.7
	Sw39	22.0/59.0	0.15b/0.27	3	2.3	1	83.0
	Sw40	22.0/37.0	0.15b/0.15b	4	2.6	3	274.0
	Sw41	22.0/59.0	0.15b/0.27	3	2.0	3	273.3
	Sw44	59.0/1.0	LWLR-1/0.27	3	2.3	1	65.0
	Sw45	59.0/1.0	0.15b/0.27	3	2.3	3	258.3
	Sw46	1.0/22.0	0.15b/0.15b	4	2.5	3	344.7
	Sw47	1.0/22.0	0.15b/0.15b	1	0.9	0	13.3
	Sw54	7.0/22.0	0.15b/0.21	4	2.5	3	272.3
	Sw55	22.0/37.0	0.15b/0.15b	4	2.9	3	204.3
	Sw56	22.0/37.0	0.15b/0.15b	4	2.9	3	241.8
	Sw57	22.0/59.0	0.15b/0.27	2	1.6	3	389.8
<b>B<sub>2</sub>T-TB<sub>2</sub> (n=8)</b>	Sw05	1.0/37.0	0.1/0.15b	2	1.6	0	35.7
	Sw06	37.0/59.0	0.24/0.27	1	1.3	3	210.8
	Sw07	1.0/37.0	0.24/0.24	1	1.3	3	170.3
	Sw08	1.0/37.0	0.1/0.15b	3	1.8	1	66.8
	Sw09	59.0/1.0	0.27/0.4	3	2.0	2	106.5
	Sw10	57.0/37.0	0.24/0.33	1	1.3	0	33.3
<b>B<sub>2</sub>T-3D (n=8)</b>	Sw11	1.0/37.0	0.24/0.24	1	1.2	3	154.3
	Sw12	1.0/22.0	0.15b/0.24	1	1.2	0	14.5
	Sw48	1.0/37.0	0.15b/0.15b	3	2.1	2	131.7
	Sw49	37.0/59.0	0.15b/0.27	2	1.7	1	76.3
	Sw50	1.0/22.0	0.15b/0.15b	3	2.1	3	500.0
	Sw51	1.0/22.0	0.15b/0.15b	4	2.4	3	371.3
	Sw58	22.0/59.0	0.15b/0.27	4	2.8	3	298.3
	Sw59	7.0/22.0	0.15b/0.21	4	2.6	3	183.8
<b>B<sub>4</sub>T (n=6)</b>	Sw60	29.0/37.0	0.15b/0.25	3	2.0	1	68.3
	Sw61	37.0/59.0	0.13/0.27	4	2.7	3	398.8
	Sw15	1.0/6.0	0.1/0.15b	2	1.7	0	26.7
	Sw16	6.0/46.0	0.15b/0.5	4	2.9	0	37.3
	Sw21	59.0/4.0	0.23/0.5	4	2.7	0	37.3
	Sw23	59.0/1.0	0.1/0.27	4	2.9	1	58.7
Sw24	59.0/1.0	0.1/0.27	5	3.0	0	49.3	

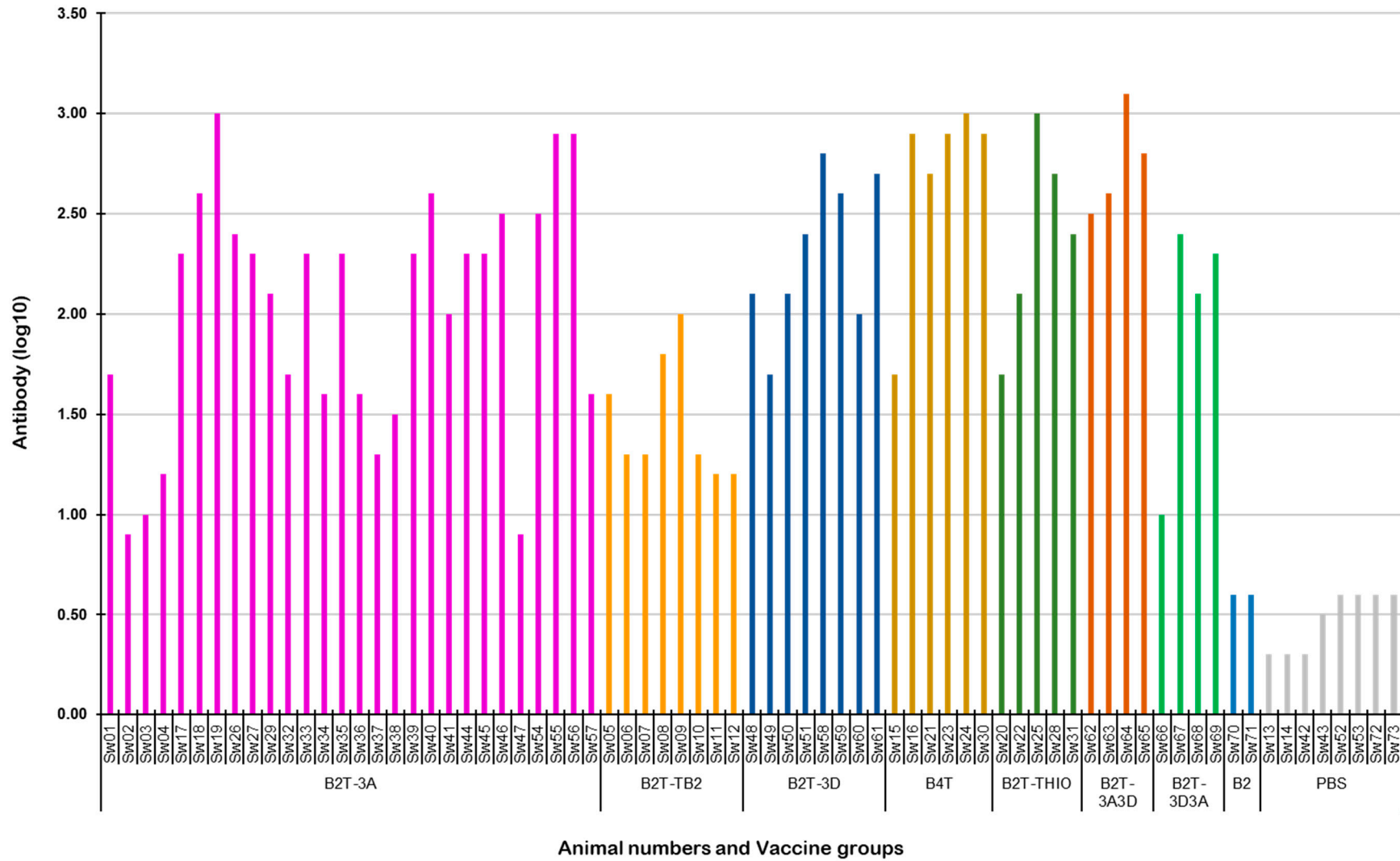
	Sw30	59.0/4.0	0.27/0.23	4	2.9	0	28.0
<b>B<sub>2</sub>T-THIO (n=5)</b>	Sw20	6.0/4.0	0.15b/0.23	2	1.7	2	100.0
	Sw22	59.0/4.0	0.27/0.5	3	2.1	0	38.7
	Sw25	59.0/4.0	0.23/0.22	5	3.0	2	94.7
	Sw28	22.0/24.0	0.27/0.22	4	2.7	2	125.3
	Sw31	22.0/11.0	0.23/0.11	4	2.4	1	78.7
<b>B<sub>2</sub>T-3A3D (n=4)</b>	Sw62	37.0/59.0	0.15b/0.27	4	2.5	1	75.8
	Sw63	22.0/59.0	0.15b/0.27	4	2.6	3	334.8
	Sw64	22.0/59.0	0.15b/0.21	5	3.1	3	173.3
	Sw65	37.0/59.0	0.15b/0.27	4	2.8	3	274.8
<b>B<sub>2</sub>T-3D3A (n=4)</b>	Sw66	37.0/59.0	0.15b/0.25	1	1.0	3	197.3
	Sw67	37.0/59.0	0.15b/0.27	4	2.4	3	235.8
	Sw68	29.0/37.0	0.15b/0.24	3	2.1	2	113.3
	Sw69	29.0/37.0	0.15b/0.24	3	2.3	2	114.3
<b>B<sub>2</sub> (n=2)</b>	Sw70	29.0/37.0	0.15b/0.25	0	0.6	0	7.8
	Sw71	29.0/37.0	0.15b/0.25	0	0.6	0	13.3
<b>PBS (Control) (n=8)</b>	Sw13	22.0/37.0	0.15b/0.27	0	0.3	0	0.0
	Sw14	22.0/55.0	0.15b/0.5	0	0.3	0	0.0
	Sw42	22.0/59.0	0.15b/0.27	0	0.3	0	0.0
	Sw43	22.0/59.0	0.15b/0.27	0	0.5	0	0.0
	Sw52	59.0/1.0	LWLR-1/0.27	0	0.6	0	0.0
	Sw53	55.0/59.0	0.6/0.27	0	0.6	0	0.0
	Sw72	1.0/37.0	0.2/0.15b	0	0.6	0	0.0
	Sw73	22.0/37.0	0.15b/0.15b	0	0.6	0	0.0

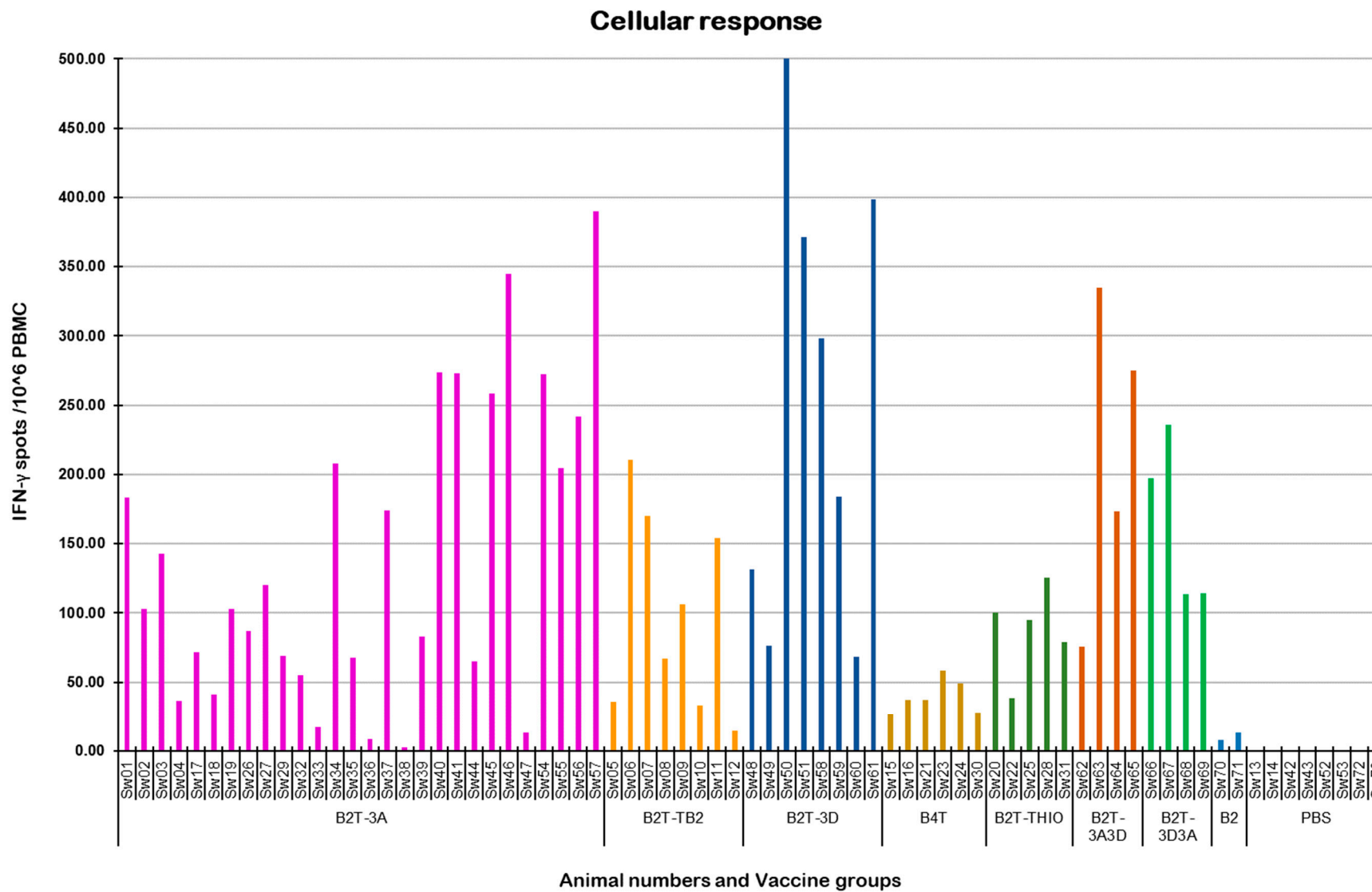
<sup>1</sup> The corresponding SLA-I and SLA-II Low-resolution Haplotypes found in each animal are indicated. <sup>2</sup> VNT were categorized as 0: <0.9; 1: >0.9 and <1.5; 2: >1.5 and <1.8; 3: >1.8 and <2.4; 4: >2.4 and <3; 5: >3. <sup>3</sup> IFN- $\gamma$  secreting T cell values were categorized as: 0: <50; 1: >50 and <90; 2: >90 and <140; 3: >140.

**Table S3.** Groups of pigs with Low-resolution Haplotypes (Lr-Hp) represented more than once.

<b>Group 1</b>			
<b>SLA-I</b>	<b>Lr-Hp</b>	<b>n</b>	<b>Animal number</b>
A	59.0/1.0	8	Sw01,09,23,24,29,35,44,45
B	22.0/59.0	7	Sw03,39,41,57,58,63,64
C	37.0/59.0	7	Sw06,49,61,62,65,66,67
D	22.0/37.0	6	Sw32,34,38,40,55,56
E	1.0/37.0	6	Sw05,07,08,11,33,48
F	1.0/22.0	6	Sw04,12,46,47,50,51
G	59.0/4.0	5	Sw18,21,22,25,30
H	29.0/37.0	3	Sw60,68,69
I	57.0/37.0	2	Sw02,10
J	6.0/4.0	2	Sw20,26
K	37.0/37.0	2	Sw36,37
L	7.0/22.0	2	Sw54,59
<b>Group 2</b>			
<b>SLA-II</b>	<b>Lr-Hp</b>	<b>n</b>	<b>Animal number</b>
A'	0.15b/0.15b	14	Sw03,32,34,36,37,38,40,46,47,48,50,51,55,56
B'	0.15b/0.27	12	Sw04,26,39,41,45,49,57,58,62,63,65,67
C'	0.1/0.15b	4	Sw05,08,15,33
D'	0.27/0.4	3	Sw01,09,18
E'	0.15b/0.24	3	Sw12,68,69
F'	0.1/0.27	3	Sw23,24,35
G'	0.15b/0.21	3	Sw54,59,64
H'	0.15b/0.25	2	Sw60,66
I'	0.24/0.33	2	Sw02,10
J'	0.24/0.24	2	Sw07,11
K'	0.23/0.5	2	Sw17,21
L'	0.15b/0.23	2	Sw19,20
M'	0.27/0.23	2	Sw29,30
<b>Group 3</b>			
<b>SLA-I/II</b>	<b>Lr-Hp</b>	<b>n</b>	<b>Animal number</b>
D A'	22.0/37.0 0.15b/0.15b	6	Sw32,34,38,40,55,56
B B'	22.0/59.0 0.15b/0.27	5	Sw39,41,57,58,63
F A'	1.0/22.0 0.15b/0.15b	4	Sw46,47,50,51
E C'	1.0/37.0 0.1/0.15b	3	Sw05,08,33
A F'	59.0/1.0 0.1/0.27	3	Sw23,24,35
C B'	37.0/59.0 0.15b/0.27	3	Sw62,65,67
A D'	59.0/1.0 0.27/0.4	2	Sw01,09
I I'	57.0/37.0 0.24/0.33	2	Sw02,10
E J'	1.0/37.0 0.24/0.24	2	Sw07,11
K A'	37.0/37.0 0.15b/0.15b	2	Sw36,37
L G'	7.0/22.0 0.15b/0.21	2	Sw54,59
H E'	29.0/37.0 0.15b/0.24	2	Sw68,69

## Antibody response





**Figure S1.** Antibody and cellular responses of 73 pigs to dendrimeric peptides. Antibody and cellular response values as in Table S2.