

Supplemental Information

Title: HLA Correlations with Clinical Phenotypes and Risk of Metabolic Co-morbidities in Singapore Chinese Psoriasis Patients

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Table S1. Comparison of HLA-DRB1 allele frequencies between psoriasis and control populations¹

Allele	Allele frequency		Odds ratio (95% CI)
	Psoriasis (2n=232)	Controls (2n=260)	
DRB1*01:01	2 (0.9)	2 (0.8)	1.12 (0.16 - 8.03)
DRB1*03:01	10 (4.3)	25 (9.6)	0.42 (0.20 - 0.90)
DRB1*04:03	6 (2.6)	9 (3.5)	0.74 (0.26 - 2.11)
DRB1*04:04	4 (1.7)	3 (1.2)	1.5 (0.33 - 6.79)
DRB1*04:05	19 (8.2)	15 (5.8)	1.46 (0.72 - 2.94)
DRB1*04:06	10 (4.3)	7 (2.7)	1.63 (0.61 - 4.35)
DRB1*07:01	0 (0.0)	5 (1.9)	n.a.
DRB1*08:02	2 (0.9)	3 (1.2)	0.74 (0.12 - 4.50)
DRB1*08:03	22 (9.5)	22 (8.5)	1.13 (0.61 - 2.11)
DRB1*08:09	0 (0.0)	4 (1.5)	n.a.
DRB1*09:01	53 (22.8)	37 (14.2)	1.78 (1.12 - 2.84)
DRB1*11:01	18 (7.8)	16 (6.2)	1.28 (0.64 - 2.58)
DRB1*12:01	3 (1.3)	9 (3.5)	0.37 (0.10 - 1.37)
DRB1*12:02	18 (7.8)	29 (11.2)	0.67 (0.36 - 1.24)
DRB1*13:02	1 (0.4)	4 (1.5)	0.28 (0.03 - 2.50)
DRB1*14:01	3 (1.3)	9 (3.5)	0.37 (0.10 - 1.37)
DRB1*14:04	2 (0.9)	2 (0.8)	1.12 (0.16 - 8.03)
DRB1*14:05	7 (3.0)	4 (1.5)	1.99 (0.58 - 6.89)
DRB1*14:54	7 (3.0)	0 (0)	n.a.
DRB1*15:01	13 (5.6)	23 (8.8)	0.61 (0.30 - 1.24)
DRB1*15:02	9 (3.9)	5 (1.9)	2.06 (0.68 - 6.23)
DRB1*16:02	20 (8.6)	18 (6.9)	1.27 (0.65 - 2.46)

n.a.: not applicable

¹Only alleles with a total count of more than three in the combined psoriasis-control dataset are displayed.

Table S2. Comparison of HLA-DRB1 genotype frequencies between psoriasis and control populations¹

Allele	Genotype frequency		Odds ratio (95% CI)
	Psoriasis (<i>n</i> = 116)	Controls (<i>n</i> = 130)	
DRB1*01:01	2 (1.7)	2 (1.5)	1.12 (0.16 - 8.10)
DRB1*03:01	9 (7.8)	22 (16.9)	0.41 (0.18 - 0.94)
DRB1*04:03	4 (3.4)	8 (6.2)	0.54 (0.16 - 1.86)
DRB1*04:04	4 (3.4)	3 (2.3)	1.51 (0.33 - 6.90)
DRB1*04:05	18 (15.5)	15 (11.5)	1.41 (0.67 - 2.94)
DRB1*04:06	9 (7.8)	7 (5.4)	1.48 (0.53 - 4.10)
DRB1*07:01	0 (0.0)	5 (3.8)	n.a.
DRB1*08:02	1 (0.9)	3 (2.3)	0.37 (0.04 - 3.59)
DRB1*08:03	21 (18.1)	22 (16.9)	1.09 (0.56 - 2.10)
DRB1*08:09	0 (0.0)	4 (3.1)	n.a.
DRB1*09:01	45 (38.8)	33 (25.4)	1.86 (1.08 - 3.21)
DRB1*11:01	17 (14.7)	16 (12.3)	1.22 (0.59 - 2.55)
DRB1*12:01	3 (2.6)	8 (6.2)	0.4 (0.10 - 1.56)
DRB1*12:02	15 (12.9)	27 (20.8)	0.57 (0.28 - 1.13)
DRB1*13:02	1 (0.9)	4 (3.1)	0.27 (0.03 - 2.49)
DRB1*14:01	3 (2.6)	8 (6.2)	0.4 (0.10 - 1.56)
DRB1*14:05	7 (6.0)	4 (3.1)	2.02 (0.58 - 7.10)
DRB1*14:54	6 (5.2)	0 (0)	n.a.
DRB1*15:01	12 (10.3)	21 (16.2)	0.6 (0.28 - 1.28)
DRB1*15:02	9 (7.8)	3 (2.3)	3.56 (0.94 - 13.49)
DRB1*16:02	19 (16.4)	17 (13.1)	1.3 (0.64 - 2.64)

n.a.: not applicable

¹Only alleles with a total count of more than three in the combined psoriasis-control dataset are displayed.

Table S3. Three-locus haplotype analysis of psoriasis patients and control subjects

Allele combination	Haplotype frequency (%)		OR	(95% CI)	P-value¹
	Psoriasis (2n = 232)	Controls (2n = 260)			
A*02:07/B*46:01/C*01:02	42.2	19.2	3.07	(1.74 - 5.44)	0.05
A*02:07/C*01:02/DRB1*09:01	28.4	10.0	3.58	(1.78 - 7.21)	0.15
A*02:07/B*46:01/DRB1*09:01	26.7	10.0	3.28	(1.62 - 6.65)	0.45

¹P-values were corrected for multiple testing.

Table S4. Age of onset of psoriasis when specific HLA alleles are present/absent

Allele	Age of onset (years)			
	Allele present		Allele absent	
	Mean	SD	Mean	SD
A*02:07	31.7	13.2	29.6	14.1
A*33:03	30.3	12.3	30.8	13.8
B*46:01	31.7	12.8	29.9	14.3
C*01:02	32.7	12.8	28.2	14.2
C*06:02	27.8	15.6	31.2	13.2

Table S5. Difference in rates of homozygosity between psoriasis cases and controls

Allele	Psoriasis		Controls		Difference (%)
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
A*02:07	8 (6.90)	4 (3.08)			3.8
B*46:01	9 (7.76)	5 (3.85)			3.9
C*01:02	10 (8.62)	7 (5.38)			3.2

Table S6. Correlations between HLA genotype frequencies and nail psoriasis and psoriatic arthritis

Nail psoriasis	Psoriatic arthritis	Allele	Genotype frequency (%) of allele		OR	(95% CI)	P-value ¹
			Symptoms present	Symptoms absent			
Present	Absent	A*02:07	65.0	48.2	1.99	(0.95 - 4.21)	n.s.
		A*33:03	10.0	14.3	0.67	(0.22 - 2.06)	n.s.
		B*46:01	51.7	50.0	1.07	(0.52 - 2.21)	n.s.
		C*01:02	63.3	51.8	1.61	(0.77 - 3.38)	n.s.
		C*06:02	6.7	21.4	0.26	(0.08 - 0.87)	n.s.
Present	Present	A*02:07	78.9	52.6	3.38	(1.05 - 10.93)	n.s.
		A*33:03	10.5	12.4	0.83	(0.17 - 4.07)	n.s.
		B*46:01	84.2	44.3	6.70	(1.83 - 24.49)	<0.01
		C*01:02	78.9	53.6	3.25	(1.00 - 10.49)	n.s.
		C*06:02	5.3	15.5	0.30	(0.04 - 2.45)	n.s.

n.s.: not significant

¹P-values were corrected for multiple testing.