**Table S1.** Distribution of HLA-B alleles in the entire group, and among male and female populations.

| HLA-B | Gene Frequency | Total Number of Patients | Male | Female | *p*-value |
|---|---|---|---|---|---|
| **B*07** | 16% | 37 | 11 | 26 | 0,150 |
| **B*08** | 23% | 47 | 18 | 29 | 0,628 |
| **B*13** | 12% | 28 | 9 | 19 | 0,315 |
| **B*14** | 4% | 10 | 3 | 7 | 0,528 |
| **B*15** | 8% | 19 | 10 | 9 | 0,343 |
| **B*18** | 28% | 59 | 31 | 28 | 0,072 |
| **B*35** | 35% | 75 | 33 | 42 | 0,679 |
| **B*37** | 2% | 4 | 1 | 3 | 0,642 |
| **B*38** | 12% | 26 | 7 | 19 | 0,142 |
| **B*39** | 5% | 11 | 4 | 7 | 0,766 |
| **B*40** | 9% | 17 | 4 | 13 | 0,133 |
| **B*41** | 6% | 12 | 9 | 3 | 0,032 |
| **B*44** | 18% | 39 | 16 | 23 | 1 |
| **B*47** | 5% | 12 | 4 | 8 | 0,766 |
| **B*48** | 1% | 3 | 2 | 1 | 0,573 |
| **B*49** | 5% | 11 | 8 | 3 | 0,057 |
| **B*50** | 4% | 9 | 6 | 3 | 0,171 |
| **B*51** | 18% | 39 | 14 | 25 | 0,484 |
| **B*52** | 6% | 12 | 5 | 7 | 1 |
| **B*53** | 2% | 4 | 1 | 3 | 0,642 |
| **B*54** | 1% | 2 | 1 | 1 | 1 |
| **B*55** | 3% | 7 | 1 | 6 | 0,245 |
| **B*56** | 2% | 5 | 1 | 4 | 0,404 |
| **B*57** | 4% | 9 | 6 | 3 | 0,117 |
| **B*58** | 3% | 6 | 4 | 2 | 0,406 |

**Table S2.** Distribution of HLA-B alleles according to clinical features in the HLA-B*27-negative SpA cohort. Values represent the percentage of patients with a given clinical manifestation who carried the respective allele.

| HLA-B | Low back pain (%) | Reduced lumbar mobility (%) | Arthritis (%) | Dactylitis (%) | Enthesitis (%) | IBD (%) | Uveitis (%) | Psoriasis (%) | Radiographical sacroiliitis (%) | Elevated CRP/ESR levels (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| **B*07** | 15,14 | 13,94 | 10,28 | 6,67 | 21,95 | 14,29 | 8,00 | 21,21 | 17,78 | 14,10 |
| **B*08** | 17,30 | 14,90 | 21,50 | 20,00 | 14,63 | 28,57 | 24,00 | 12,12 | 18,89 | 16,67 |
| **B*13** | 11,35 | 8,65 | 11,21 | 20,00 | 7,32 | 14,29 | 8,00 | 21,21 | 8,89 | 11,54 |
| **B*14** | 3,24 | 2,88 | 2,80 | 13,33 | 2,44 | 0,00 | 0,00 | 3,03 | 5,56 | 5,13 |
| **B*15** | 5,95 | 3,85 | 8,41 | 13,33 | 7,32 | 14,29 | 12,00 | 6,06 | 7,78 | 6,41 |
| **B*18** | 23,24 | 20,67 | 25,23 | 20,00 | 24,39 | 14,29 | 28,00 | 18,18 | 25,56 | 24,36 |
| **B*35** | 29,19 | 21,63 | 28,97 | 26,67 | 24,39 | 28,57 | 24,00 | 33,33 | 23,33 | 34,62 |
| **B*37** | 1,08 | 0,96 | 1,87 | 13,33 | 0,00 | 0,00 | 0,00 | 3,03 | 1,11 | 1,28 |
| **B*38** | 11,89 | 7,21 | 9,35 | 0,00 | 12,20 | 14,29 | 4,00 | 6,06 | 6,67 | 7,69 |
| **B*39** | 3,78 | 3,37 | 5,61 | 6,67 | 4,88 | 0,00 | 4,00 | 6,06 | 3,33 | 6,41 |
| **B*40** | 7,57 | 6,73 | 7,48 | 20,00 | 4,88 | 0,00 | 8,00 | 0,00 | 7,78 | 6,41 |
| **B*41** | 3,24 | 3,85 | 5,61 | 6,67 | 2,44 | 0,00 | 0,00 | 6,06 | 4,44 | 3,85 |
| **B*44** | 12,97 | 12,98 | 14,95 | 13,33 | 9,76 | 14,29 | 16,00 | 21,21 | 13,33 | 10,26 |
| **B*47** | 4,32 | 4,33 | 5,61 | 0,00 | 7,32 | 0,00 | 8,00 | 3,03 | 4,44 | 2,56 |
| **B*48** | 1,08 | 0,96 | 0,93 | 0,00 | 2,44 | 0,00 | 0,00 | 0,00 | 0,00 | 2,56 |
| **B*49** | 4,32 | 3,85 | 4,67 | 0,00 | 2,44 | 0,00 | 0,00 | 3,03 | 4,44 | 3,85 |
| **B*50** | 3,24 | 2,88 | 0,00 | 0,00 | 4,88 | 14,29 | 8,00 | 0,00 | 5,56 | 5,13 |
| **B*51** | 12,97 | 12,02 | 14,95 | 13,33 | 19,51 | 28,57 | 24,00 | 9,09 | 12,22 | 17,95 |
| **B*52** | 5,95 | 5,77 | 2,80 | 0,00 | 2,44 | 0,00 | 0,00 | 6,06 | 5,56 | 0,00 |
| **B*53** | 1,62 | 0,96 | 0,93 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 1,11 | 2,56 |
| **B*54** | 1,08 | 0,96 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 3,03 | 1,11 | 0,00 |
| **B*55** | 2,16 | 2,40 | 2,80 | 6,67 | 0,00 | 0,00 | 0,00 | 0,00 | 2,22 | 1,28 |
| **B*56** | 2,16 | 1,92 | 0,93 | 0,00 | 2,44 | 0,00 | 8,00 | 3,03 | 2,22 | 0,00 |
| **B*57** | 3,24 | 2,40 | 2,80 | 0,00 | 0,00 | 0,00 | 4,00 | 12,12 | 6,67 | 3,85 |
| **B*58** | 2,16 | 1,92 | 2,80 | 0,00 | 4,88 | 0,00 | 0,00 | 3,03 | 2,22 | 2,56 |

**Table S3**. Associations of HLA-B alleles with clinical manifestations in the HLA-B*27-negative SpA cohort (Fisher's Test)

| | *p*-value | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **HLA-B** | **Low back pain** | **Reduced lumbar mobility** | **Arthritis** | **Dactylitis** | **Enthesitis** | **IBD** | **Uveitis** | **Psoriasis** | **Radiographical sacroiliitis** | **Elevated CRP/ESR levels** |
| **B*07** | 0,561 | 0,129 | 0,154 | 0,702 | 0,140 | 1,000 | 0,547 | 0,280 | 0,262 | 1,000 |
| **B*08** | 0,726 | 1,000 | 0,251 | 0,736 | 0,661 | 0,612 | 0,412 | 0,470 | 0,738 | 0,861 |
| **B*13** | 0,665 | 0,221 | 0,840 | 0,205 | 0,588 | 0,550 | 1,000 | 0,062 | 0,674 | 0,827 |
| **B*14** | 0,489 | 0,433 | 0,745 | 0,105 | 1,000 | 1,000 | 0,605 | 1,000 | 0,318 | 0,489 |
| **B*15** | 0,295 | 0,033 | 0,630 | 0,296 | 1,000 | 0,412 | 0,404 | 1,000 | 0,805 | 1,000 |
| **B*18** | 0,747 | 0,822 | 0,371 | 1,000 | 0,839 | 1,000 | 0,458 | 0,658 | 0,436 | 0,630 |
| **B*35** | 0,766 | 0,130 | 0,890 | 1,000 | 0,578 | 1,000 | 0,816 | 0,539 | 0,197 | 0,179 |
| **B*37** | 0,584 | 0,188 | 1,000 | 0,017 | 1,000 | 1,000 | 1,000 | 0,417 | 1,000 | 1,000 |
| **B*38** | 0,115 | 1,000 | 0,537 | 0,375 | 0,572 | 0,522 | 0,485 | 0,754 | 0,277 | 0,505 |
| **B*39** | 0,737 | 1,000 | 0,363 | 0,483 | 0,683 | 1,000 | 1,000 | 0,634 | 0,754 | 0,311 |
| **B*40** | 0,410 | 0,210 | 0,616 | 0,063 | 1,000 | 1,000 | 0,669 | 0,141 | 0,600 | 1,000 |
| **B*41** | 0,191 | 0,275 | 0,555 | 0,513 | 0,698 | 1,000 | 0,612 | 0,651 | 1,000 | 1,000 |
| **B*44** | 0,254 | 0,670 | 0,860 | 1,000 | 0,472 | 1,000 | 0,773 | 0,294 | 0,716 | 0,190 |
| **B*47** | 0,754 | 0,716 | 0,555 | 1,000 | 0,407 | 1,000 | 0,319 | 1,000 | 1,000 | 0,519 |
| **B*48** | 1,000 | 0,500 | 1,000 | 1,000 | 0,400 | 1,000 | 1,000 | 1,000 | 0,553 | 0,211 |
| **B*49** | 1,000 | 1,000 | 0,762 | 1,000 | 1,000 | 1,000 | 0,607 | 1,000 | 1,000 | 1,000 |
| **B*50** | 0,727 | 1,000 | 0,012 | 1,000 | 0,634 | 0,219 | 0,207 | 0,608 | 0,282 | 0,457 |
| **B*51** | 0,254 | 0,670 | 1,000 | 1,000 | 0,346 | 0,278 | 0,231 | 0,436 | 0,466 | 0,349 |
| **B*52** | 0,117 | 0,134 | 0,370 | 1,000 | 0,698 | 1,000 | 0,612 | 0,651 | 0,551 | 0,021 |
| **B*53** | 1,000 | 1,000 | 0,648 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 0,584 |
| **B*54** | 1,000 | 1,000 | 0,516 | 1,000 | 1,000 | 1,000 | 1,000 | 0,236 | 1,000 | 1,000 |
| **B*55** | 0,427 | 0,635 | 1,000 | 0,340 | 0,600 | 1,000 | 1,000 | 0,601 | 1,000 | 0,678 |
| **B*56** | 1,000 | 1,000 | 0,651 | 1,000 | 0,575 | 1,000 | 0,073 | 0,491 | 1,000 | 0,326 |
| **B*57** | 0,727 | 0,691 | 0,742 | 1,000 | 0,362 | 1,000 | 0,599 | 0,017 | 0,067 | 0,727 |
| **B*58** | 1,000 | 1,000 | 0,690 | 1,000 | 0,236 | 1,000 | 1,000 | 0,556 | 1,000 | 1,000 |

**Table S4.** Logistic regression analysis of HLA-B allele distribution by sex

| HLA-B | *p*-value | OR | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower | Upper |
| **B*07** | 0,152 | 2,078 | 0,764 | 5,662 |
| **B*08** | 0,164 | 2,031 | 0,751 | 5,425 |
| **B*13** | 0,260 | 1,870 | 0,629 | 5,578 |
| **B*14** | 0,250 | 2,565 | 0,517 | 12,663 |
| **B*15** | 0,800 | 0,775 | 0,262 | 2,809 |
| **B*18** | 0,431 | 0,726 | 0,285 | 1,707 |
| **B*35** | 0,948 | 1,046 | 0,425 | 2,494 |
| **B*37** | 0,156 | 7,020 | 0,477 | 101,353 |
| **B*38** | 0,083 | 2,838 | 0,873 | 9,047 |
| **B*39** | 0,545 | 1,577 | 0,362 | 6,836 |
| **B*40** | 0,126 | 2,991 | 0,735 | 12,214 |
| **B*41** | 0,044 | 0,200 | 0,041 | 0,961 |
| **B*44** | 0,699 | 1,214 | 0,456 | 3,224 |
| **B*47** | 0,448 | 1,723 | 0,420 | 7,094 |
| **B*48** | 0,566 | 0,493 | 0,038 | 6,021 |
| **B*49** | 0,062 | 0,221 | 0,045 | 1,078 |
| **B*50** | 0,189 | 0,341 | 0,065 | 1,716 |
| **B*51** | 0,455 | 1,446 | 0,545 | 3,885 |
| **B*52** | 0,892 | 0,914 | 0,230 | 3,590 |
| **B*53** | 0,352 | 3,119 | 0,283 | 34,661 |
| **B*54** | 0,924 | 0,855 | 0,043 | 17,197 |
| **B*55** | 0,217 | 4,176 | 0,432 | 40,253 |
| **B*56** | 0,217 | 5,005 | 0,389 | 64,010 |
| **B*57** | 0,277 | 0,406 | 0,080 | 2,059 |
| **B*58** | 0,150 | 0,233 | 0,032 | 1,697 |