

AN INITIAL REPORT ON MINORITIES REPRESENTED IN THE HELLENIC CORD BLOOD BANK (HCBB) INVENTORY

Amalia Dinou¹, Maria Spyropoulou-Vlachou², Louiza Potamiti¹, Theofanis Chatzistamatiou¹, Efstathios Michalopoulos¹, Andreas Papassavas¹, Catherine Stavropoulos-Giokas¹

¹Hellenic Cord Blood Bank, BRFAA

²General Hospital of Athens "Alexandra"; Immunology Dpt-Tissue Typing Lab

The Hellenic Cord Blood Bank (HCBB) was established in 2004 and up to now has an inventory of 3270 cryopreserved cord blood units (CBUs). An analysis showed that almost 10% (n=306) of the HCBB units are derived from ethnic minorities present in Greece. Half of these women were Albanian (n=135), while the rest were mostly of Eastern European/Balkan origin (n=70) and Western European origin (n=51).

Aim

The aim was to see if the haplotype content of the CBUs stored, covers not only the common haplotypes of the Greek population but also haplotypes characteristic of ethnic minorities in Greece, such as Albanians who constitute the most numerous of these groups.

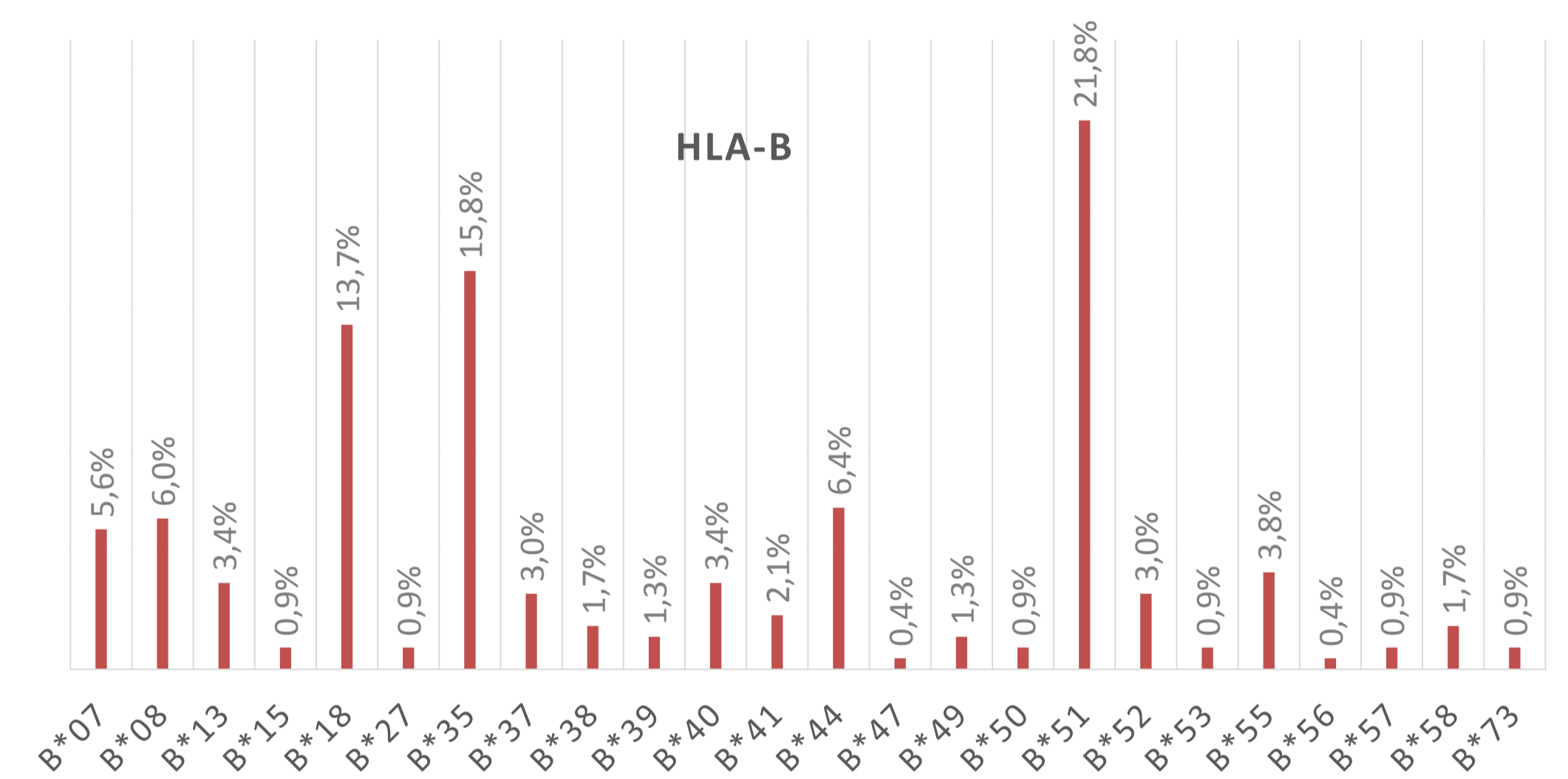
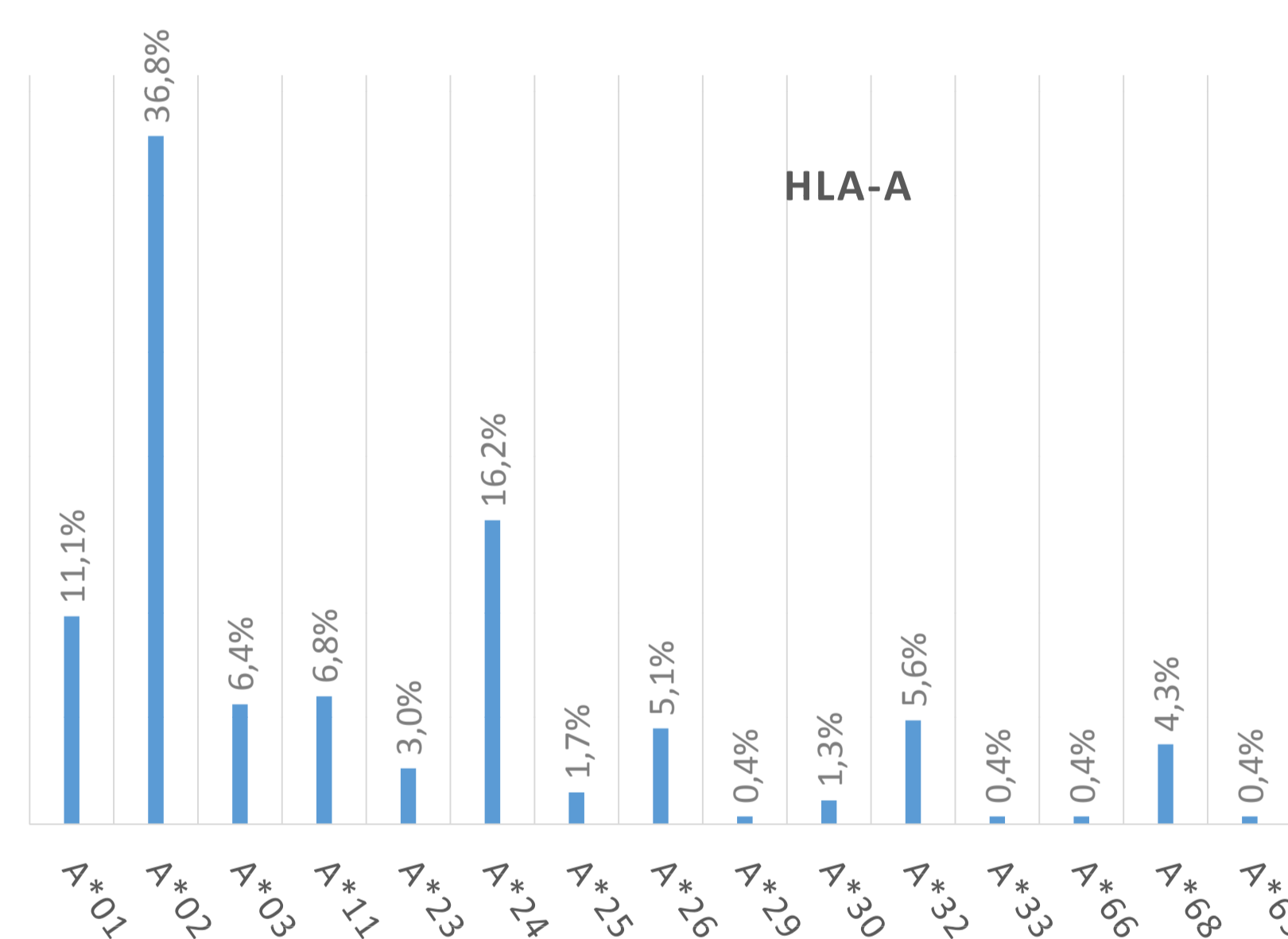
Material and Methods

The paired maternal samples of cryopreserved CBUs were genotyped for HLA-A,-B-DRB1 through a 2-digit resolution PCR-SSOP (*Lifecodes, Immucor*).

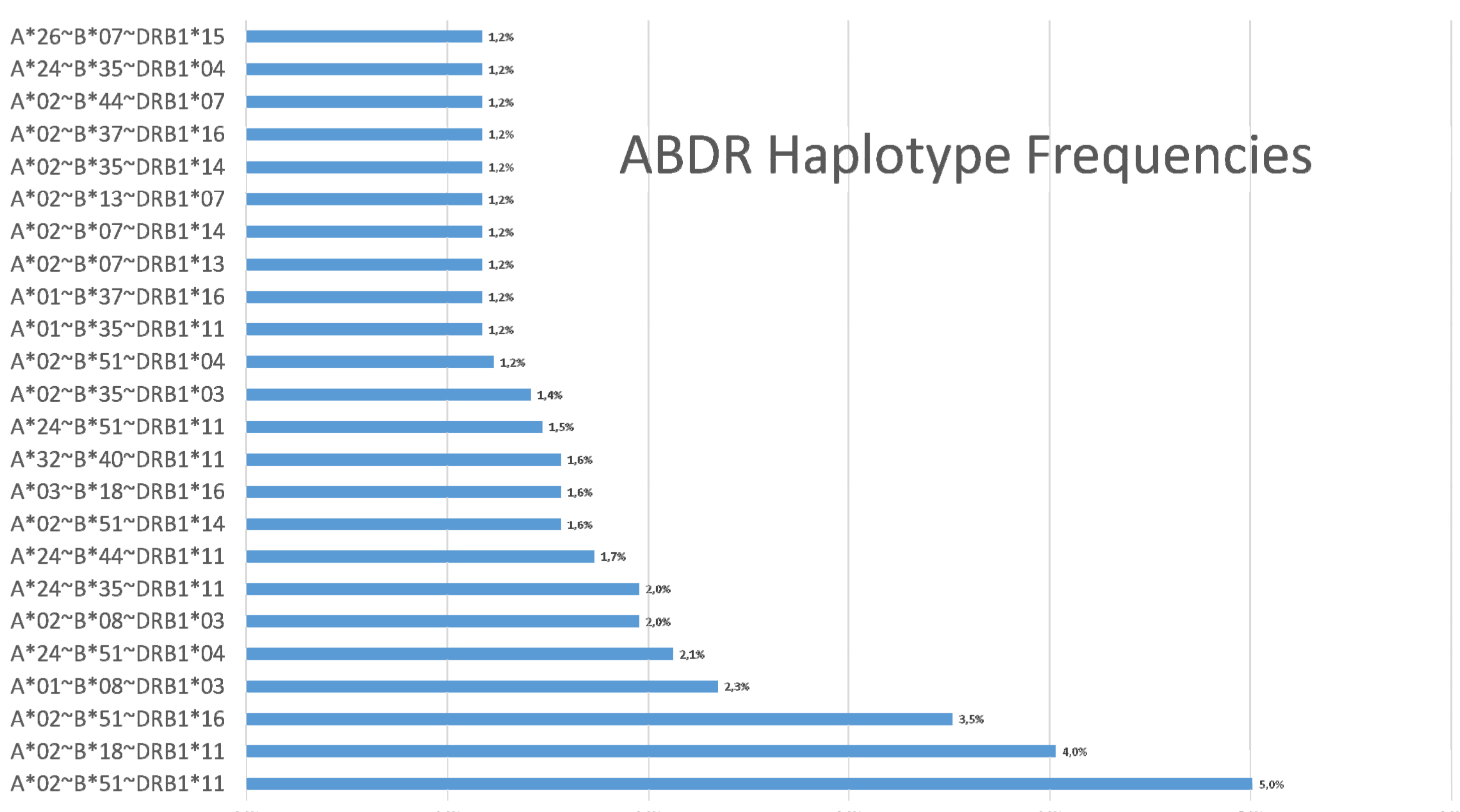
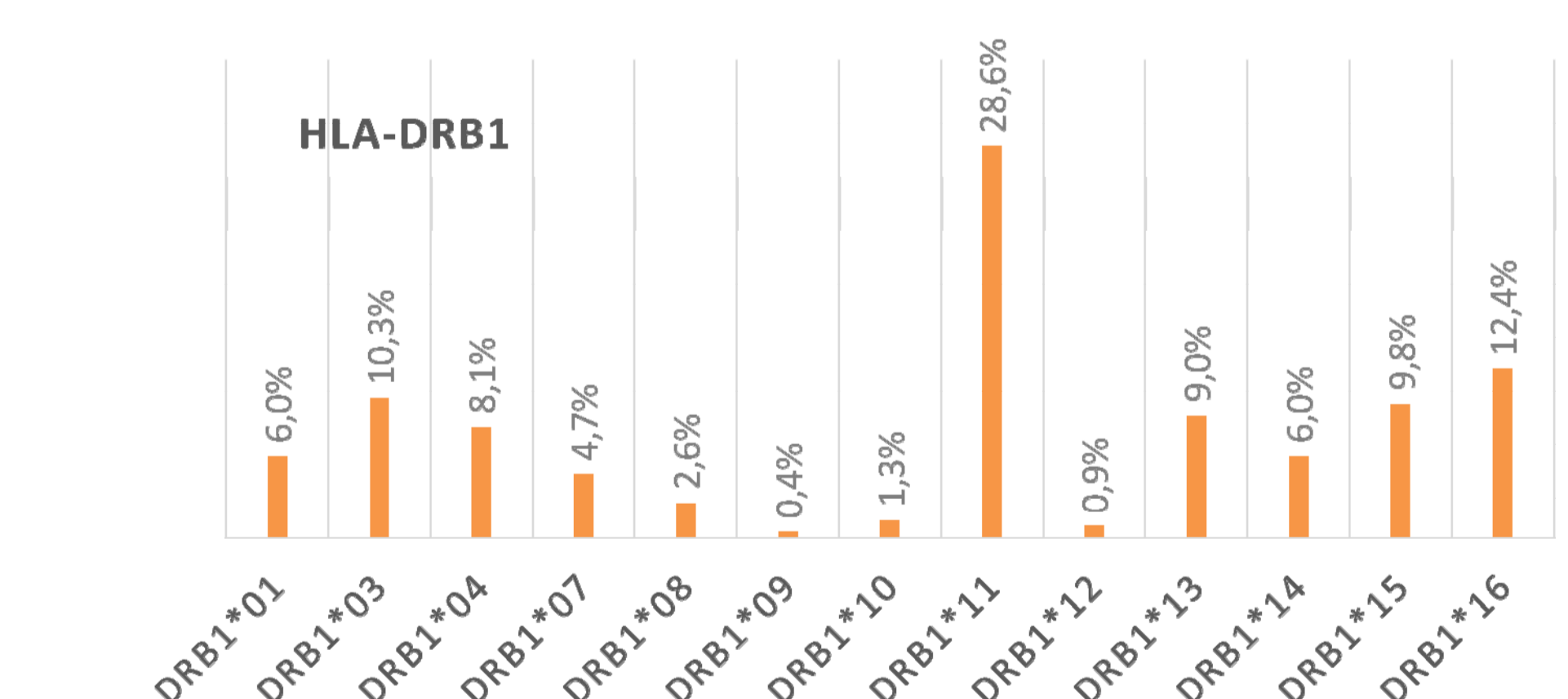
Allelic and estimated Haplotype frequencies of Albanian mothers (n=135) were calculated and compared to the corresponding HLA-A,-B,-DRB1 allelic and haplotype frequencies of the HCCB inventory (n=2413), using Arlequin program (*Excoffier, L. and H.E. L. Lischer (2010) Arlequin suite ver 3.5: A new series of programs to perform population genetics analyses under Linux and Windows. Molecular Ecology Resources. 10: 564-567*).

Results

The most frequent allelic groups in the group of Albanian mothers, for HLA-A were: HLA-A*02 (36.7%), HLA-A*24 (16.8%); HLA-A*01 (10.2%); HLA-A*03 (7%) and HLA-A*11 (6.2%). For HLA-B the most common were HLA-B*51(21.9%); HLA-B*35(16%); HLA-B*18(12.9%); HLA-B*44(7%); HLA-B*07(5.9%). For HLA-DRB1 the most frequent alleles were HLA-DRB1*11(28.9%), HLA-DRB1*16(12.5%) and HLA-DRB1*03(9.8%). The following antigens were not detected in our limited sample: A*31, A*34, A*36, A*74, A*80, B*14, B*42, B*45, B*46, B*48, B*54, B*59, B*67, B*78, B*81, B*82, B*83.



The most frequent estimated haplotypes for mothers of Albanian descent were: HLA-A*02~B*51~DRB1*11 (5%), HLA-A*02~B*18~DRB1*11 (4%) and HLA-A*02~B*51~DRB1*16 (3.5%).



These results, compared with the HCBB inventory indicated a close relationship both in allele and in haplotype frequencies. Also, there was no statistical difference with the allele frequencies previously reported concerning the Albanian population except for the haplotype HLA-A*02~B*51~DRB1*11, that was the most frequent in Albanian mothers, present in the HCBB inventory (2.1%), but in a very lower frequency in the published results for the Albanian population (*Sulcebe G, Sanchez-Mazas A, Tiercy JM, Shyti E, Mone I, Ylli Z, Kardhashi V. HLA allele and haplotype frequencies in the Albanian population and their relationship with the other European populations. Int J Immunogenet. 2009 Dec;36(6):337-43*).

This data shows close similarities of the Greeks with the neighboring Albanian population, so the HLA haplotype content of the HCBB could also provide Albanians, who are the biggest ethnic minority in Greece, with suitable compatible cord blood units for HSC Transplantation.