



Research article

Modulation of IL-17A and IFN γ by β 2-adrenergic agonist terbutaline and inverse-agonist nebivolol, influence of ADRB2 polymorphisms

Catalina Marysol Carvajal Gonczi¹, Fadi Touma¹, Tina Daigneault², Chelsea Pozzebon³, Kelly Burchell-Reyes⁴ and Peter J. Darlington^{5,*}

¹ Clinical Analysis Laboratory, PERFORM Centre, Department of Biology, Concordia University, Montreal, QC, Canada

² Faculty of Medicine, University of Toronto, Toronto, ON, Canada

³ Faculty of Medicine and Health Sciences, McGill University, Montréal, QC, Canada

⁴ Department of Chemistry, University of Laval, Québec City, QC, Canada

⁵ Clinical Analysis Laboratory, PERFORM Centre, Department of Health, Kinesiology & Applied Physiology, Department of Biology, Concordia University, Montreal, QC, Canada

* **Correspondence:** Email: peter.darlington@concordia.ca; Tel: +51484824243306.

Supplementary

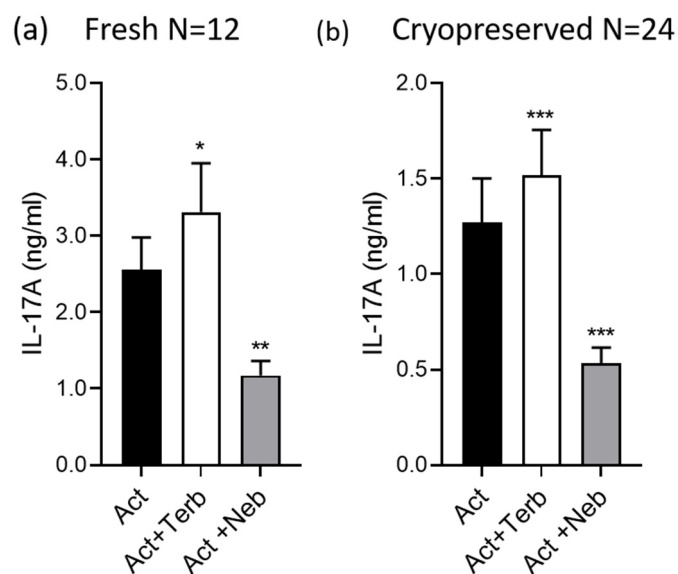


Figure S1. Post hoc analysis of fresh versus cryopreserved PBMCs used in the experiments. (a) Fresh PBMC samples were tested on the same day of the blood draw. (b) Different cryopreserved samples were cryopreserved and then thawed prior to the experiment. All samples were activated in equivalent conditions, including anti-CD3 and anti-CD28 antibodies, and IL-17A was measured using ELISA. This subset analysis included 36 samples, 12 had been tested fresh, 24 from cryopreserved samples. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

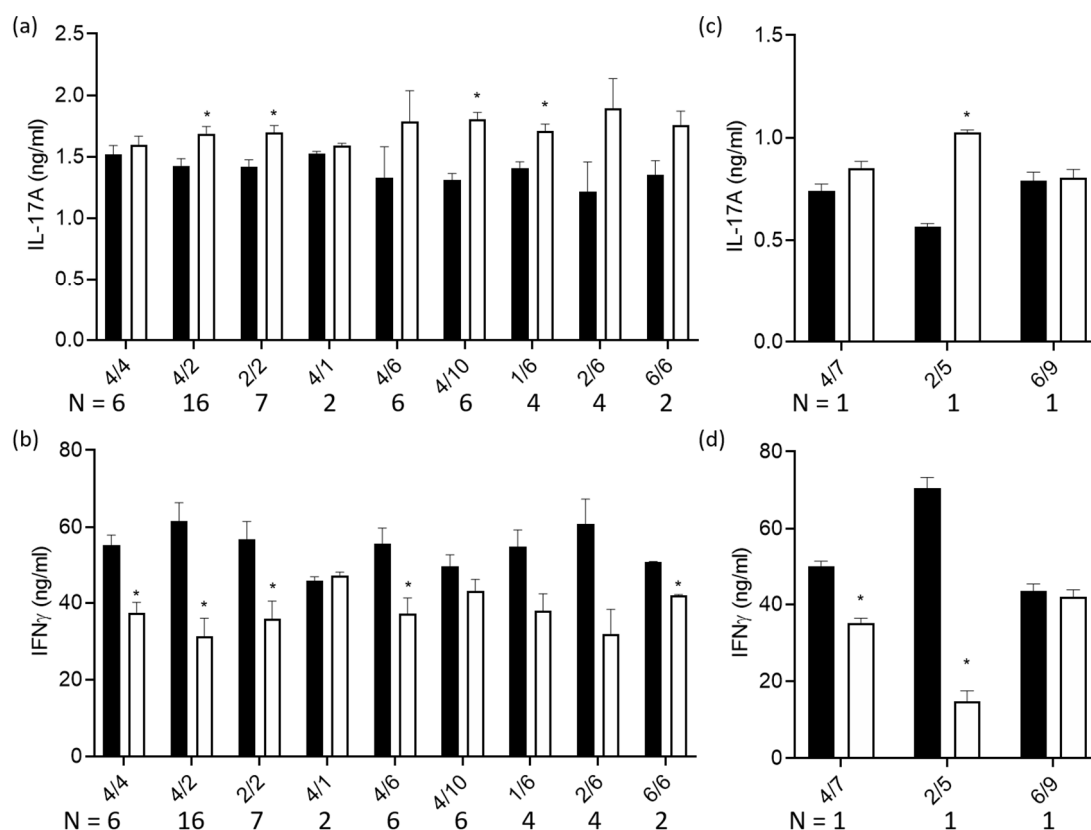


Figure S2. IL-17A and IFN γ response of PBMC based on *ADRB2* for all of the haplotypes detected in 56 samples. PBMCs were activated for four days with anti-CD3 and anti-CD28 antibodies (black bars) including β 2-agonist terbutaline 10^{-5} M (open bars). The cytokines IL-17A and IFN γ were measured in cell culture supernatants using ELISA. The *ADRB2* sequence was categorized as haplotype pairs. We assigned 4/6 to these samples based on probability, because the frequency of 4/6 is approximately 30%, whereas the frequency of 8/11 is less than 1% in the Drysdale study [19]. The amount of (a) IL-17 (b) IFN γ are shown for haplotypes, as represented by at least two or more samples, where the error bars show the N of samples. The amount of (c) IL-17A and (d) IFN γ are shown for haplotypes, as represented by one sample, where the error bars indicate the technical ELISA replicates. The number of participant samples in each category is listed under the x-axis labels. Error bars show standard error. The statistic was a multiple t-test with correction for multiple comparisons using the Holm–Sidak method (* $p < 0.05$).