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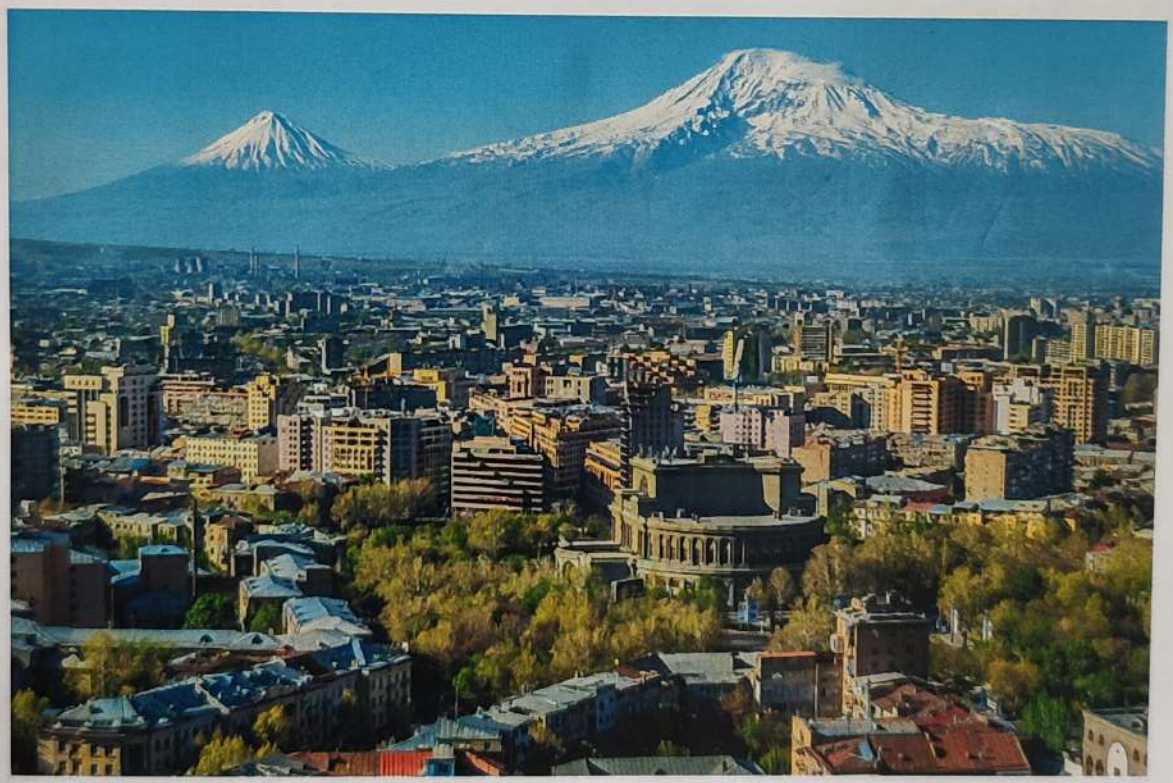
Program and Abstracts



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THE ROLE OF REGULATORY T CELLS IN THE DEVELOPMENT OF OBESITY IN MIF-KO MICE

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Obesity is a disorder characterized by a pro-inflammatory environment in visceral adipose tissue (VAT) due to increased infiltration of pro-inflammatory macrophages and a drop in regulatory T (Treg) cells. Macrophage migration Inhibitory Factor (MIF) is a pro-inflammatory cytokine with versatile functions in innate and adaptive immunity. Although it has a predominantly pro-inflammatory role in the organism, its innate absence in MIF-KO mice leads to obesity. VAT in MIF-KO mice is larger in mass and the infiltration of immune cells per gram of VAT is not different than in WT controls. Also, MIF-KO VAT has the same distribution of immune cells (CD3+, CD4+, CD8+, CD19+ cells, M1 and M2 macrophages), but a higher expression and secretion of TNF-α and IL-1β. Surprisingly, Treg cells are more abundant in VAT of MIF-KO mice. Proliferation of Treg cells in VAT measured by BrdU incorporation is the same in both strains, suggesting that their increased number is not due to enhanced in situ division. Cytokines responsible for Treg suppressive action, IL-10 (denoted as CD4+IL-10+FoxP3+ cells) and TGF-β (secreted from VAT infiltrating cells), are underrepresented in VAT of MIF-KO mice. Based on these results, we can assume that Treg cells in VAT of MIF-KO mice are, albeit extensively present, less functional. This situation may be responsible for obesity development in the absence of MIF.

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