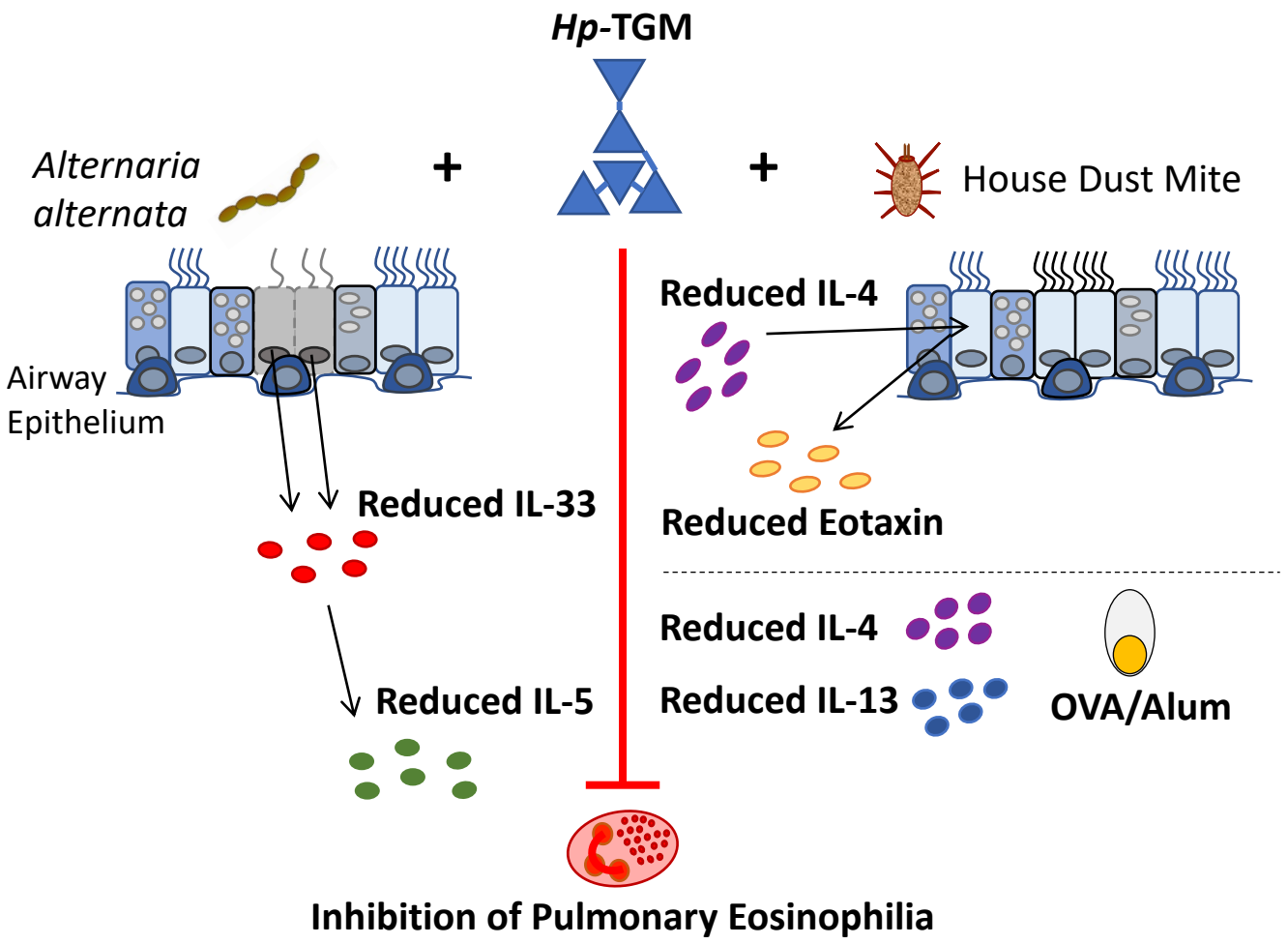
## Graphical Abstract

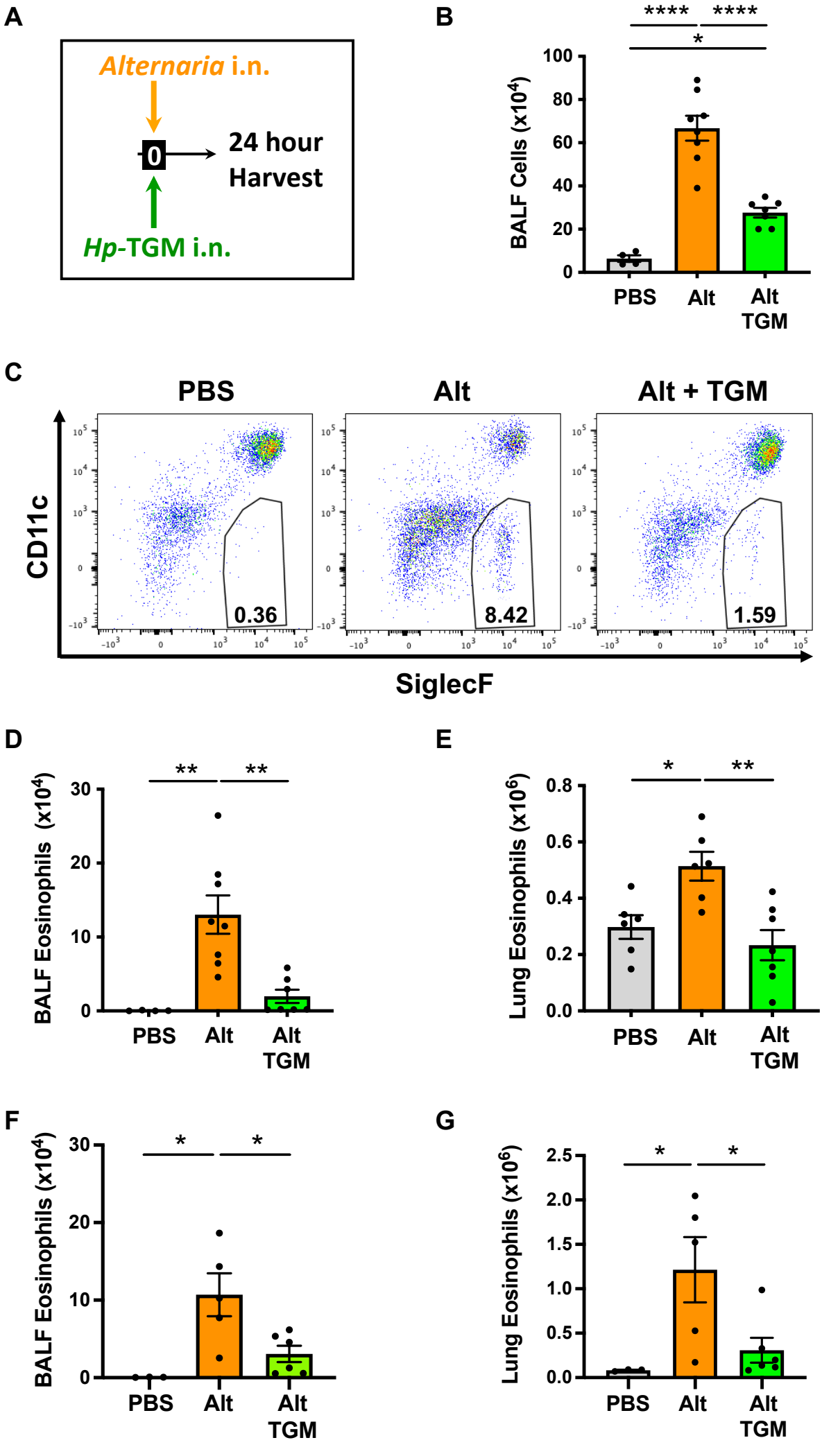



Type 2-high asthma is a chronic inflammatory airways disease characterized by T helper 2 (Th2)-dependent accumulation of eosinophils in the lungs. Regulatory cytokines such as TGF-β can restrain inflammatory reactions, dampen allergic Th2 responses, and control eosinophil activation.

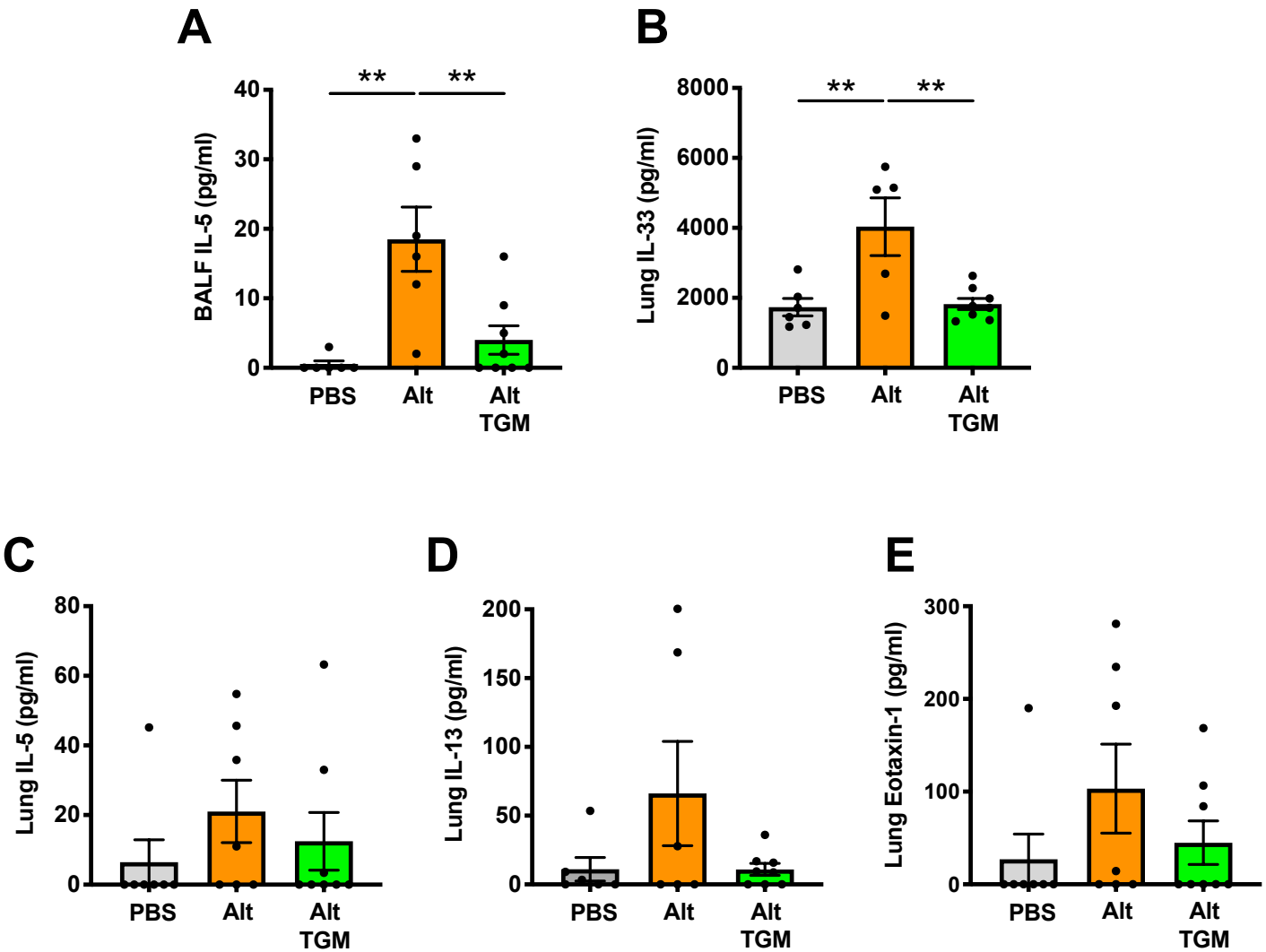
The murine helminth parasite *H.polygyrus* releases a TGF-β mimic (*Hp*-TGM) that replicates TGF-β properties despite bearing no structural similarity to the mammalian protein.

Here we show that *Hp*-TGM could alleviate airway and lung tissue eosinophilia, in association with control of IL-5 and IL-33 cytokine levels at 24 hours, or either IL-4 and eotaxin-1, or IL-4 and IL-13 responses in T-cell mediated models.

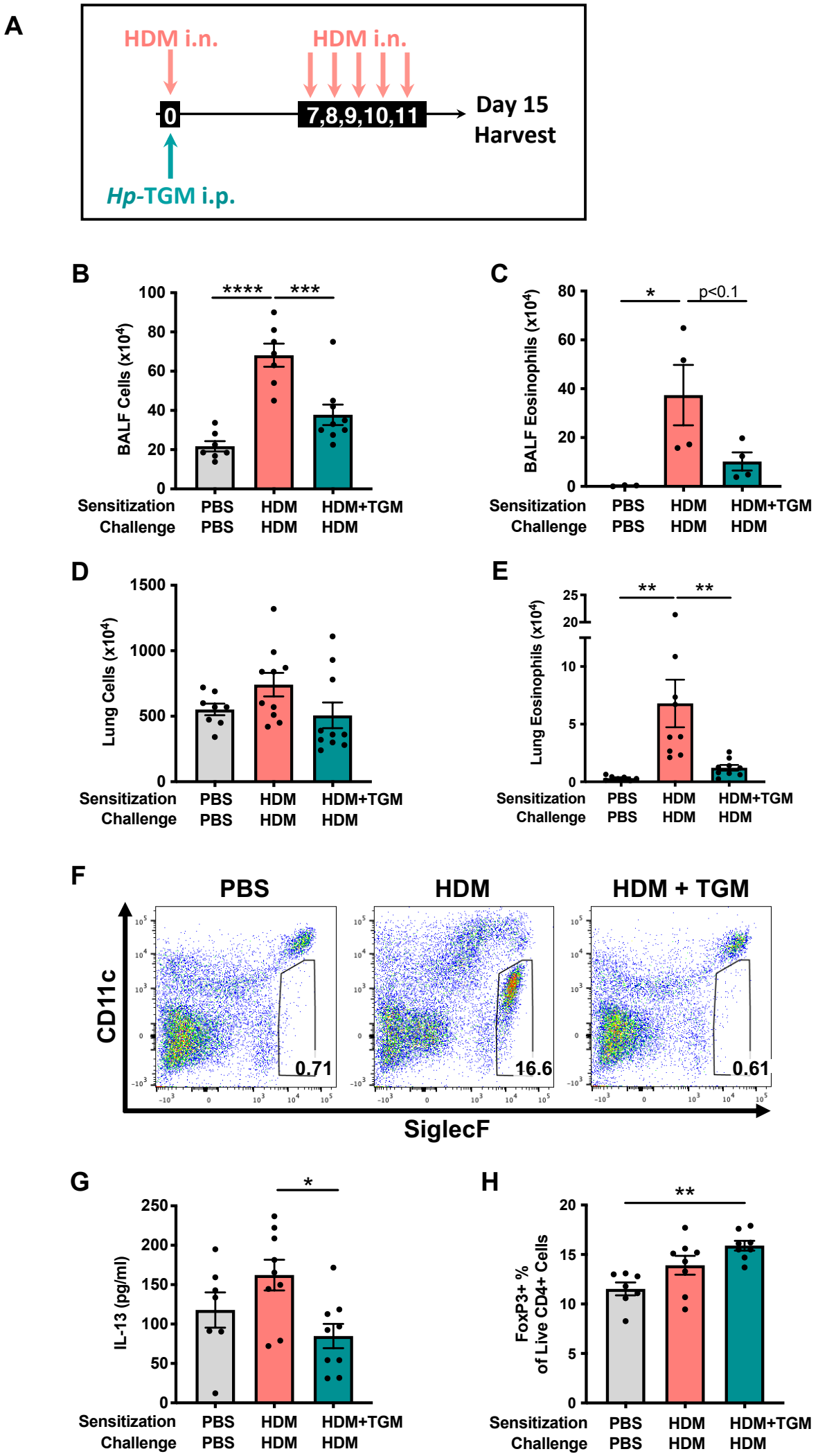
Chauché *et al.* Figure 1



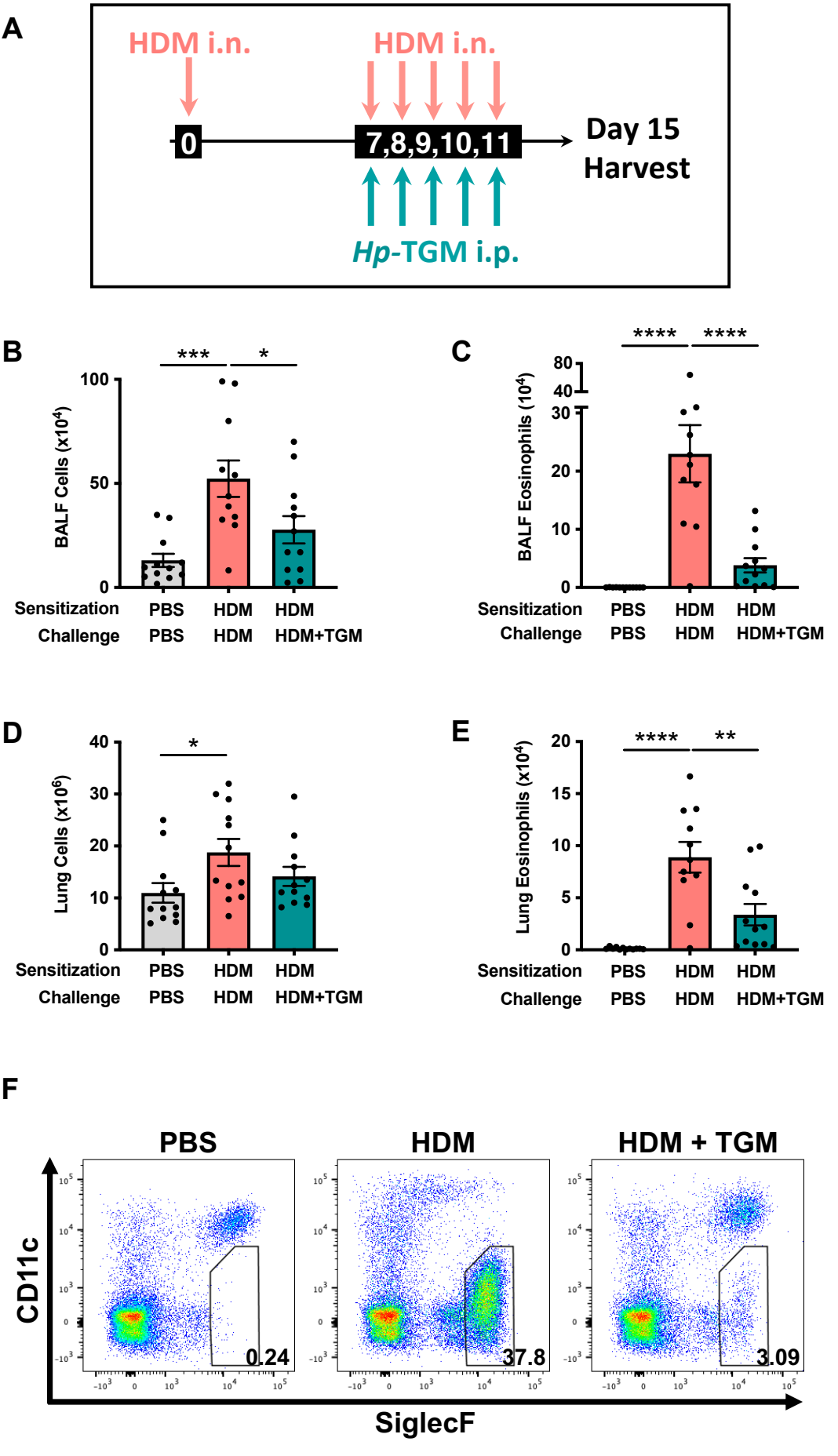
Chauché *et al.* Figure 2



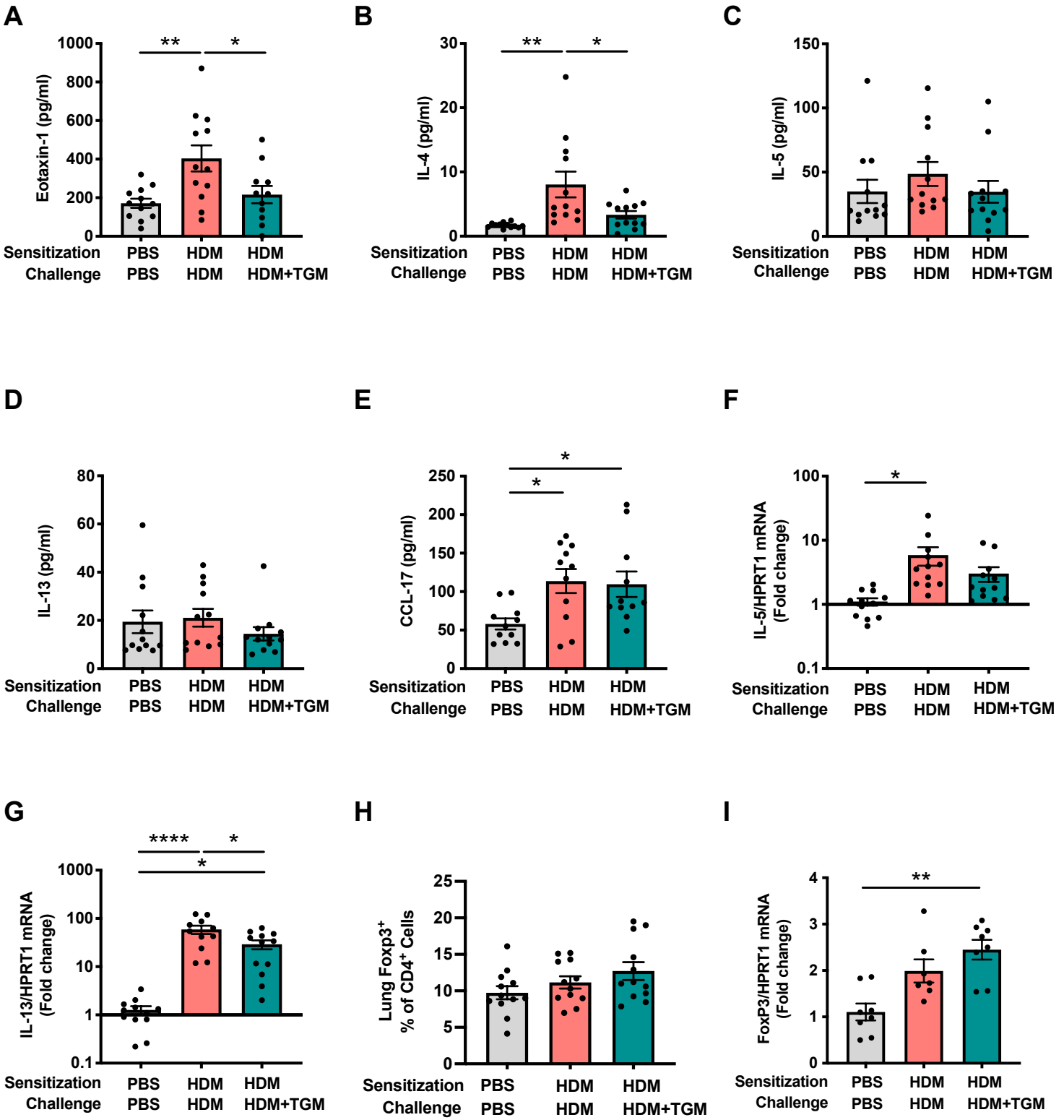
Chauché *et al.* Figure 3



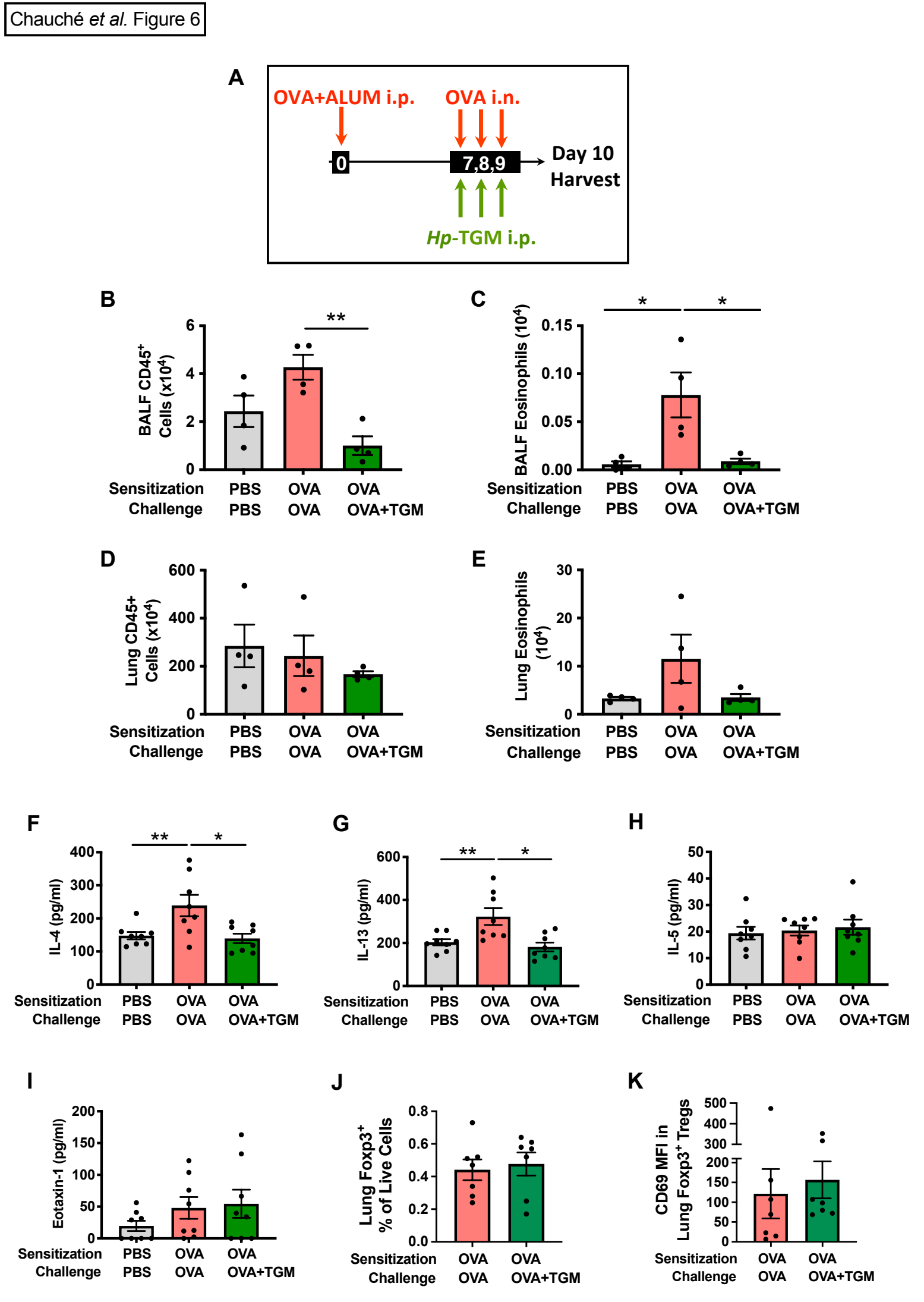
Chauché *et al.* Figure 4



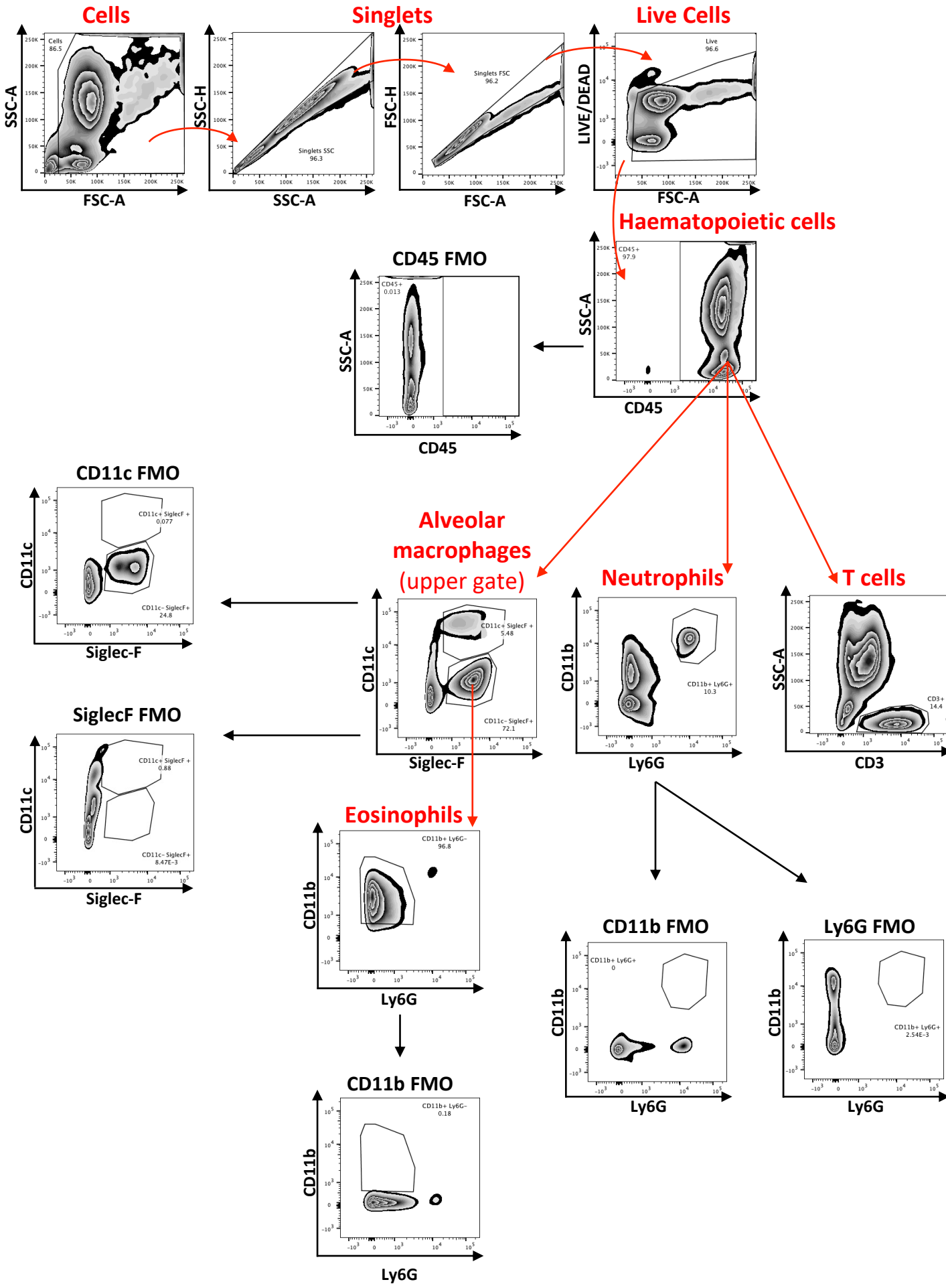
Chauché *et al.* Figure 5



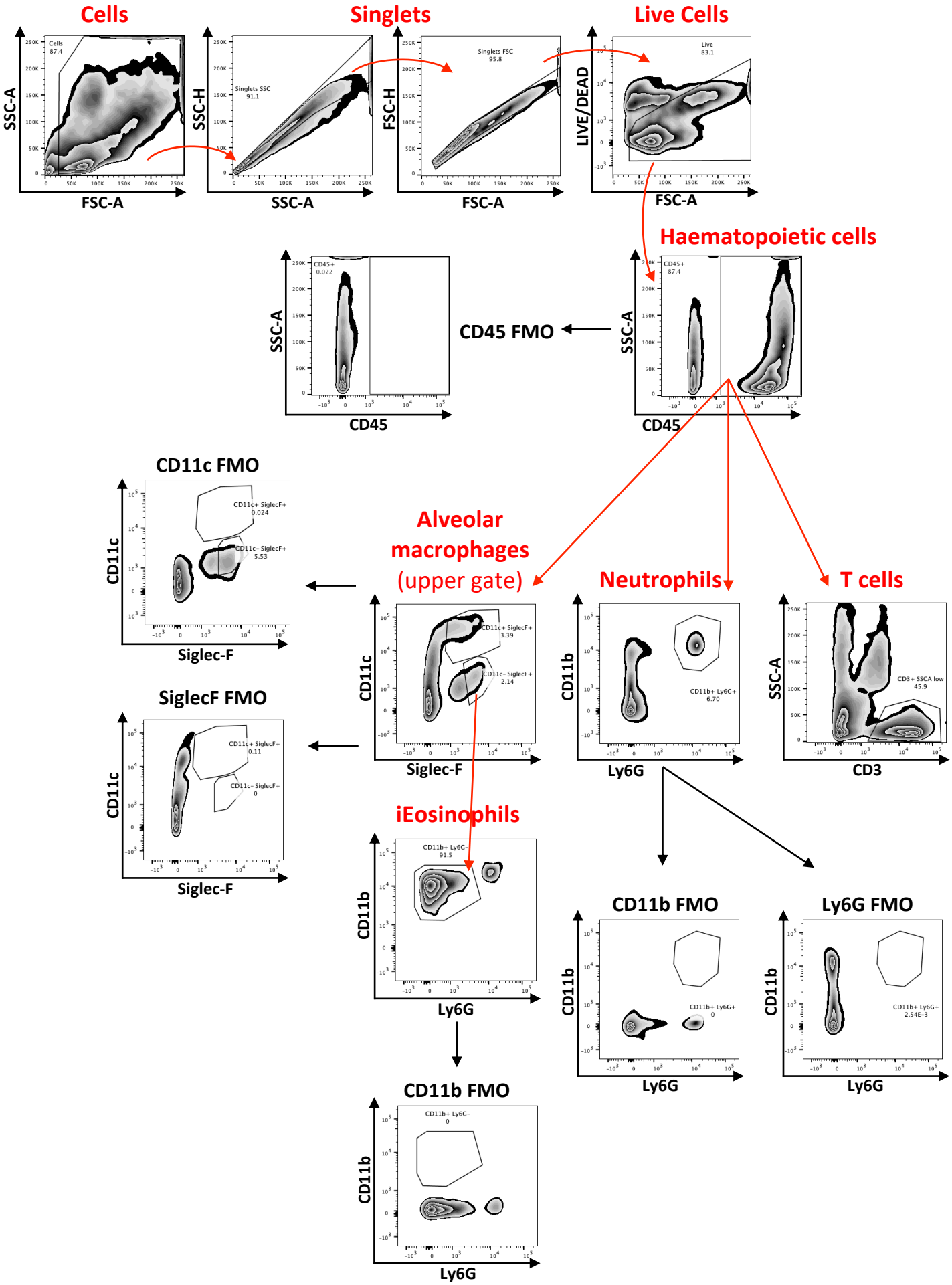
Chauché *et al.* Figure 6



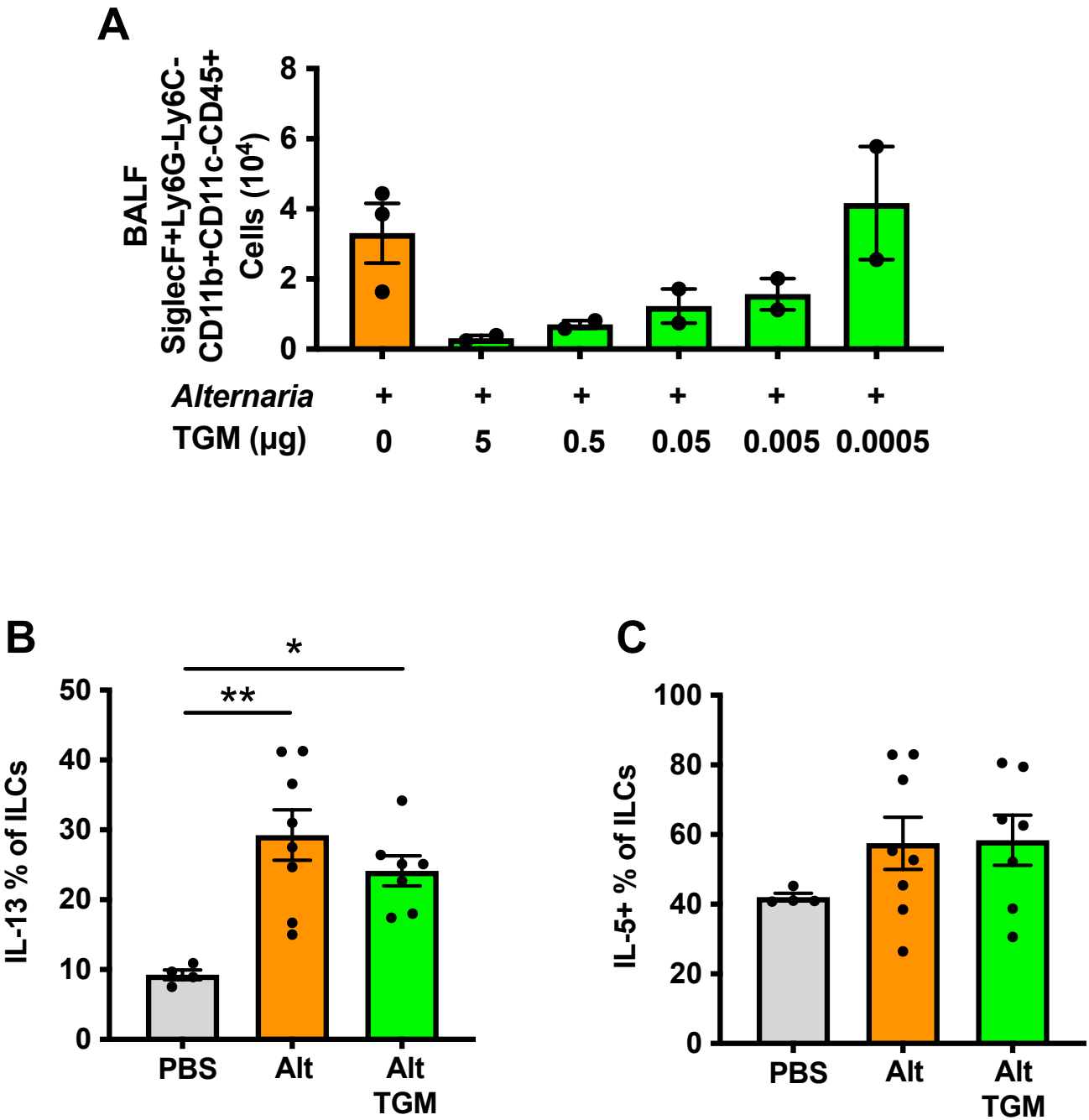
**Supplementary Figure 1. Gating strategy for T cells, eosinophils, neutrophils and alveolar macrophages in BALF samples.**



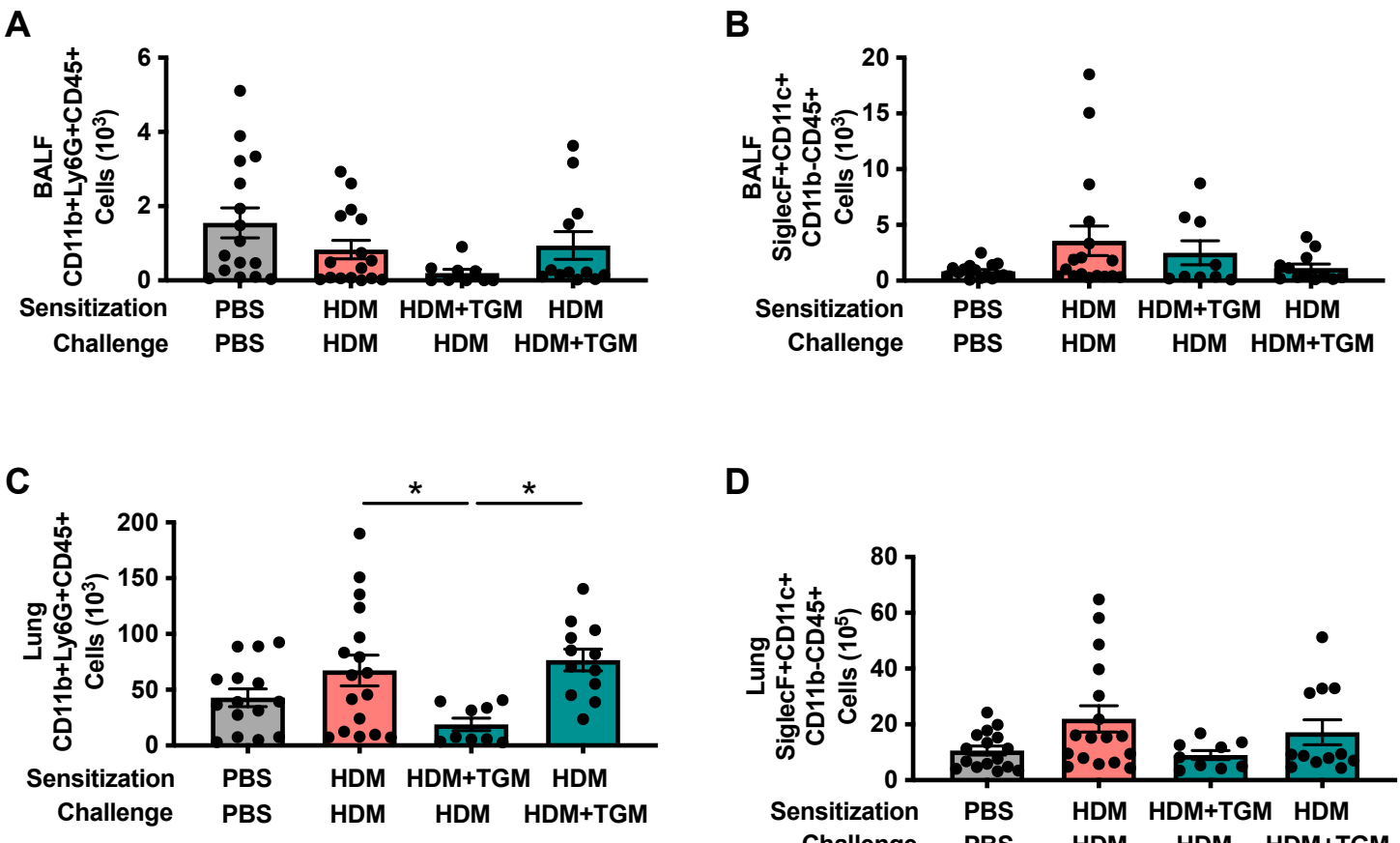
**Supplementary Figure 2. Gating strategy for T cells, eosinophils, neutrophils and alveolar macrophages in lung samples.**



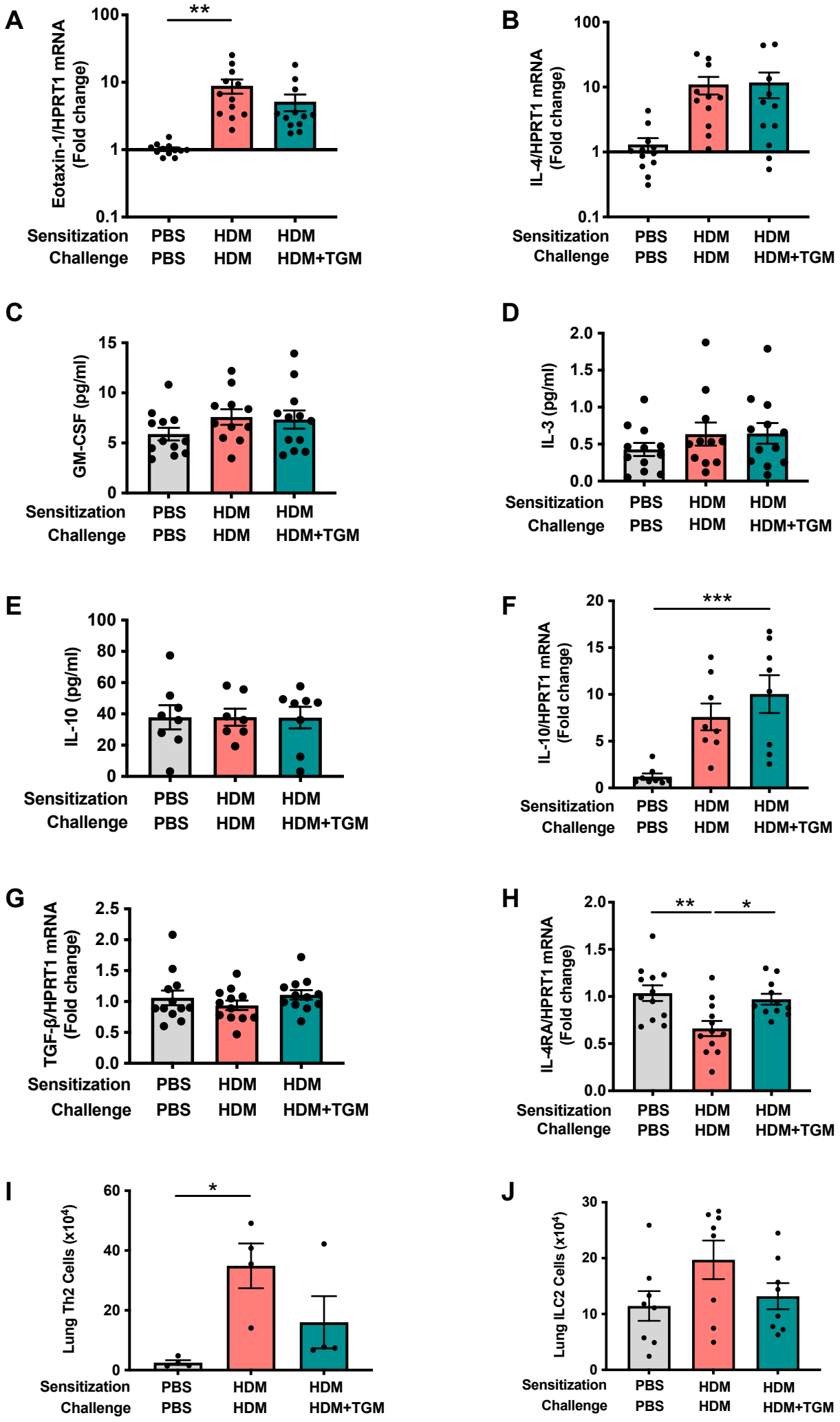
Chauché *et al.* Suppl Figure 3



Chauché *et al.* Suppl. Figure 4



Chauché *et al.* Suppl. Figure 5



Chauché *et al.* Suppl. Figure 6