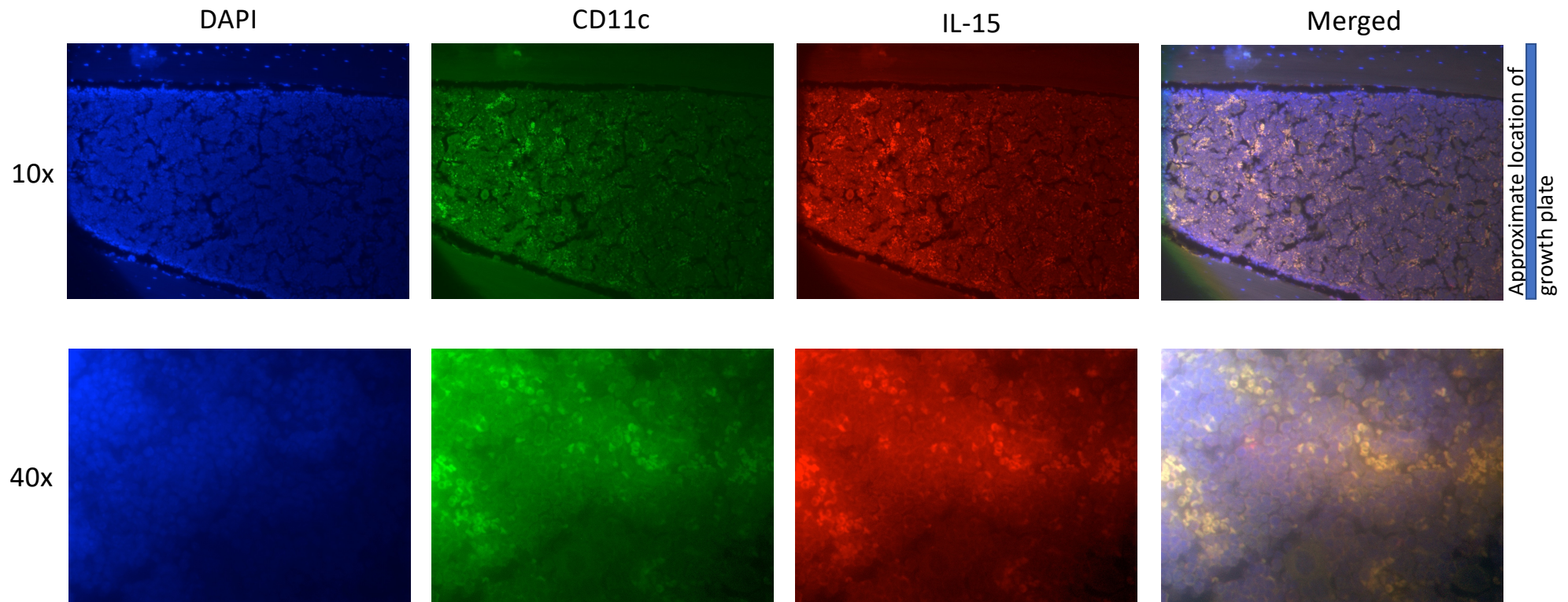
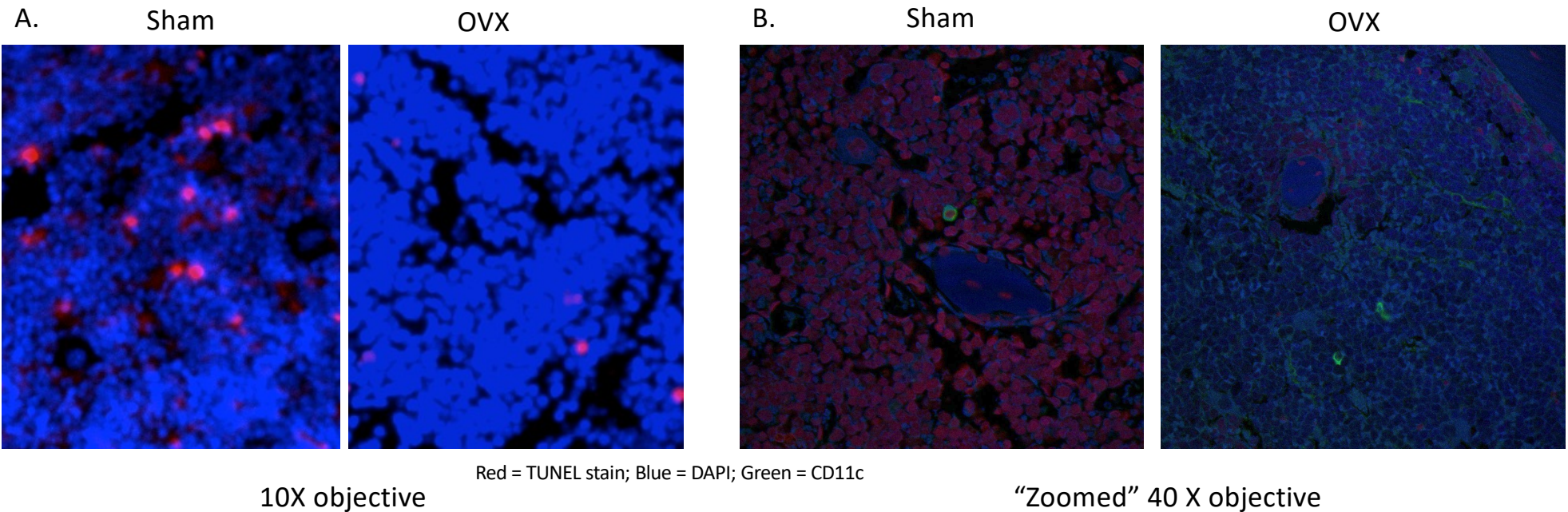


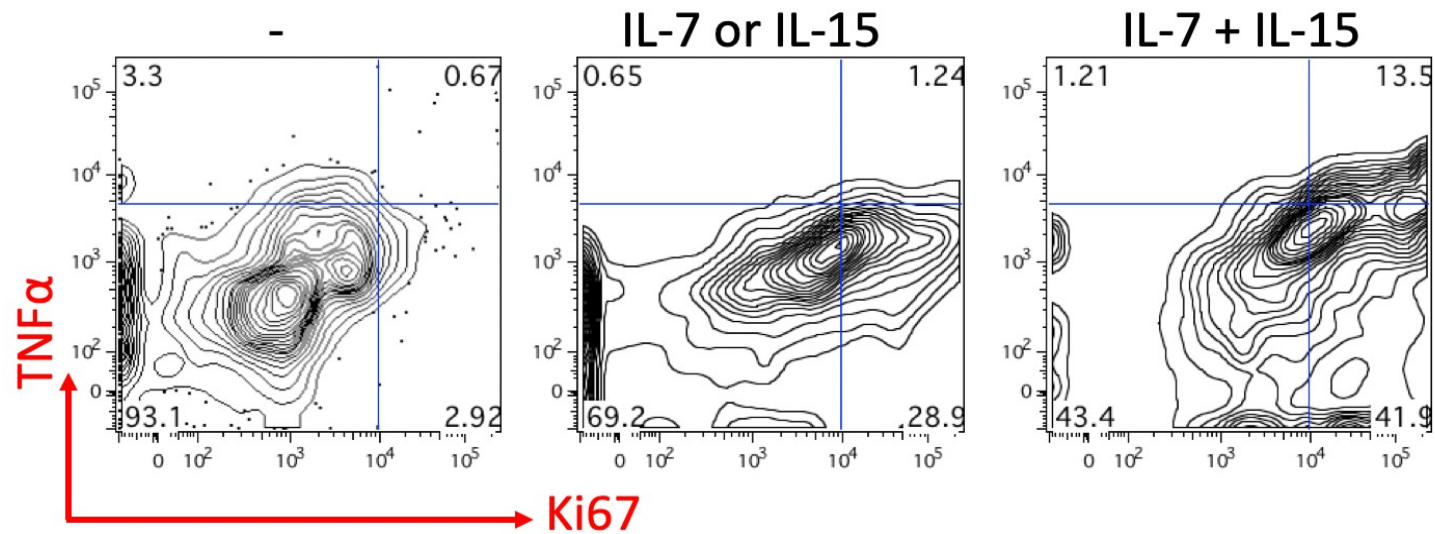
Supplementary Fig. 1: **Characterization of IL-7 expressing dendritic cells:** Bone marrow cells from estrogen-replete female 12-week-old IL-7^{CFP} reporter mice were stained and analyzed by flow cytometry. Representative contour plots (from n=3) are shown. CFP is expressed mainly in CD45 positive population ($2.8 \pm 0.2\%$), and to a lesser extent ($0.7 \pm 0.2\%$) in CD45 negative populations. The majority of the CD45⁺CFP⁺ population are CD11b⁺ (myeloid lineage marker) and CD11c⁺ [$60 \pm 4\%$; a dendritic cell marker] positive. Since they express both CD11b and CD11c markers we refer to these cells as myeloid dendritic cells (mDC). To determine the lineage of these mDC we performed staining with additional markers. The mDC expressed both transcription factors IRF4 and IRF8, as well as CD4, CD8 or both and were MHC class II positive. We conclude that these mDC have a common lineage but are somewhat divergent and distinct population than the plasmacytoid DC, classical DC1 or cDC2 previously described. As shown in Fig 1B, the CD45⁺ CFP⁺ CD11b⁺ CD11c⁺ population increases post-OVX.



Supplementary Fig. 2: **Representative immunofluorescence of CD11c positive DC expressing IL-15:** Low (upper panels) and high (lower) magnification images are shown from the tibia two weeks post-OVX. The growth plate (approximate location marked by blue bar) is to the right of image in the upper panels, with many IL-15 and CD11c expressing DC are found clustered in foci near trabeculae. In the merged image, the yellow color was produced by the overlay of green (CD11c) and red (IL-15) signals. The 40X images were not based on choice of ROI but by magnification of foci.



Supplementary Fig. 3: **Estrogen-replete mice have foci of apoptosis:** Panel A imaged at low magnification shows that apoptotic cells (TUNEL positive in red) are found in foci with the bone marrow in sham-operated mice. In Panel B, we zoomed in (high magnification) to one of the foci to show that the cells surrounding the DC (CD11c) have many cells that are apoptotic. While the CD11c and TUNEL signals were colocalized estrogen-replete (sham-surgery) mice, there was no CD11c signal in the few TUNEL positive foci observed in OVX mice. Additional studies would be needed to definitively identify the apoptotic cell types and whether they undergo apoptosis directly in response to estrogen or by another mechanism.



Supplementary Fig. 4: **IL-7 and IL-15 lead to proliferation of T_{MEM}** : Memory T-cells (T_{MEM}) were harvested from bone marrow of 9-week-old female mice by sorting on CD45, CD3, CD44 and CD62L. The T_{MEM} were cultured in absence of or in the presence of IL-7, IL-15 (20 and 50 ng/ml respectively) or both for two days. IL-7 or IL-15 leads to proliferation of (quantified by expression of Ki-67 in) T_{MEM} . In presence of BMDC and estrogen the proliferating cells would most likely undergo apoptosis due to expression of Fas on the T_{MEM} and Fas ligand by BMDC. However, in the presence of both IL-7 and IL-15 the T_{MEM} proliferated, and a subset expressed TNF α .