Tfh (CXCR5+PD1+) and Tph (CXCR5-PD1hi) were increased, compared to culture in the presence of TLR8-stimulated neutrophils, the proportion of IL21-expressing IFNγ contact with T cells. Neutrophils from HD express OX40L with TLR8 agonist, or antibodies (p= 0.04, r = 0.33). Of note, the percentage of OX40L+ neutrophils was 1.34%±1.62 vs SLE = 4.53%±8.1; p=0.29). OX40L expression positively correlated with neutrophils in SLE (n=54) were increased compared to HD (n=25)(mean + SD: HD = 80% (Figure 1). The patient had no CRS, and no neurotoxicity was observed.

**Results:** Among the co-stimulatory molecules tested, percentages of OX40L+ neutrophils in SLE (n=54) were increased compared to HD (n=25)(mean + SD: HD = 1.34%±1.62 vs SLE = 4.53%±8.1; p=0.29). OX40L expression positively correlated with neutrophils from HD express OX40L with TLR8 agonist, or IFNαs primed following by TLR7 agonist. When memory CD4 T cells were cultured in the presence of TLR8-stimulated neutrophils, the proportion of IL21-expressing Th (CXCR5+PD1+) and Tph (CXCR5+PD1hi) were increased, compared to culture with unstimulated neutrophils. This process was dependent on OX40-OX40L interactions, since in vitro treatment with the anti-OX40 blocking antibody ISB 830, inhibited the differentiation of memory T cells into Th and Tph. Both generated Th and Tph were able to promote the differentiation of memory B cells into Ig-secreting plasmablasts.

**Conclusion:** Our results disclose an unprecedented phenomenon where cross-talk between TLR7/8-activated neutrophils and CD4 lymphocytes operates through OX40L-OX40 costimulation, and neutrophils promote the differentiation of pro-inflammatory Th and Tph, as well as IL21 production. Therefore, OX40L/OX40 should be considered as a potentially therapeutic axis in SLE patients (n=27 , mean = 1.4%±2.5; p = 0.02). The percentage of OX40L+ neutrophils was higher in patients with class III or IV lupus nephritis, and inflammatory infiltrate within the kidney biopsy disclosed OX40L+ neutrophils, in close contact with T cells. Neutrophils from HD express OX40L with TLR8 agonist, or IFNαs primed following by TLR7 agonist. When memory CD4 T cells were cultured in the presence of TLR8-stimulated neutrophils, the proportion of IL21-expressing Th (CXCR5+PD1+) and Tph (CXCR5+PD1hi) were increased, compared to culture with unstimulated neutrophils. This process was dependent on OX40-OX40L interactions, since in vitro treatment with the anti-OX40 blocking antibody ISB 830, inhibited the differentiation of memory T cells into Th and Tph. Both generated Th and Tph were able to promote the differentiation of memory B cells into Ig-secreting plasmablasts.

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**References:**

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