May 31, 2021

My coauthors and I are happy to submit our manuscript “B Cell (CD19+) and Macrophage (CD68+) Spatial Interaction in the Tumor Microenvironment Associated with Higher Survival Probability” for consideration for publication as a Rapid Impacts article in *Molecular Cancer Research*. This work presents novel analysis of spatial relationships of immune cells in the ovarian tumor microenvironment. Conflicting literature exists which quantifies immune infiltrate and associates high infiltrate with both low and high survival probability. We add to this literature the spatial interaction between immune cells and its association with survival probability. We hypothesize it is the interaction between specific immune cell types, as opposed to presence of these cell types alone, that leads to better survival outcomes.

The data examines tissue microarray samples from 127 patients who have high-grade serous ovarian cancer. The analysis links immune cell spatial interactions directly back to survival outcomes via Kaplan-Meier curves and Cox proportional hazard models. The findings suggest patients with greater interaction of B cells and Macrophages have higher survival probability. The data and code used for analysis will be made publicly available upon publication to aid in reproducibility.

Thank you for your time and consideration.