**Poster Number: 15**

# MetroHealth Medical Center

## RESEARCH DAY 2023

### Abstract Submission Form

**Poster Title:** **Role of EphA2 Receptor Tyrosine Kinase in Immune Evasion and Tumor Progression**

**Authors:** **Soyeon Kim, Xiaojun Shi, Wei Wang, Ryan Lingerak, Hebei Lin, Khalid Sossey-Alaoui, Bingcheng Wang**

**Presenter's Name:** **Soyeon Kim**

**Location of Laboratory:** **Rammelkamp, MetroHealth Center for Cancer Research**

**Category:** **Cancer Biology**

---

EphA2, a member of biggest receptor tyrosine kinase (RTK) family, has been intensely studied over the past two decades due to its frequent overexpression and association with malignant progression in many human cancer types. Our lab had generated EphA2 knockout (KO) mice for systematic investigation of EphA2. We found that multiple syngeneic tumor models showed much slower growth in EphA2KO mice, including our in-house developed 283LM skin squamous cell carcinoma-derived lung metastasis model, W134 lung cancer model, widely used EO771 breast cancer model, and YUMM5.2 melanoma models. Immunophenotyping of these different tumors in WT and EphA2KO mice using flow cytometry and immunohistochemistry showed that there was higher T cell infiltration and lower MDSCs recruitment in the tumors of EphA2KO mice. The tumor growth trend was reversed and comparable with that of WT when the tumor-bearing EphA2KO mice were treated with anti-CD8 antibody. Further analysis of cytokines in tumors showed that there was significantly increased expression of chemokines that regulates immune cell trafficking in tumor such as CCL11, CCL9, CCL3, CCL5, CXCL9, CCL24, and CX3CL1 in EphA2KO mice tumor. This suggests that EphA2 plays a key role in immune cell infiltration to tumor, and EphA2 overexpression in tumor would modify the anti-tumor immune landscape to promote tumor progression.