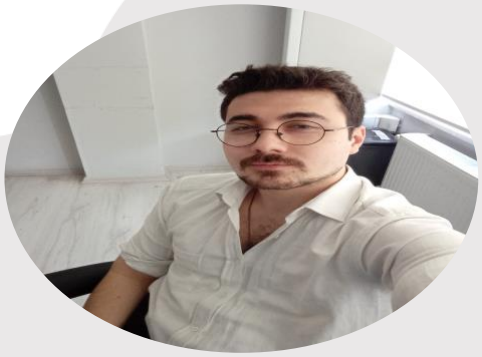

# INVESTIGATION OF THE EFFECT OF CCL5 ON SPLENIC CD8+ AND CD4+ MEMORY T CELLS IN TRIPLE-NEGATIVE BREAST CANCER (TNBC)

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## THESIS ABSTRACT

Triple-Negative Breast Cancer (TNBC) is an aggressive subtype characterized by limited treatment options and poor response to immunotherapy. In this study, the effect of CCL5 on $CD4^+$ and $CD8^+$ memory T cells was investigated using the 4T1 mouse model. CCL5 was found to direct the differentiation of various memory T cell subsets and exhibit antitumor activity. The results suggest that CCL5 may play a stage-dependent regulatory role in memory T cell programming.

### APPLICATION AREAS OF THE THESIS RESULTS

In this study, $CD4^+$ TRM cells cultured with 4T1 supernatant containing -CD3 (137 µg) demonstrated tumor-suppressive effects, whereas those derived from antigen-preexposed cells exhibited weaker responses. This suggests that high antigen exposure may facilitate tumor development. Additionally, $CD4^+$ TRM functions were found to vary depending on culture duration, the immune microenvironment, and chemokines such as CXCL1 and CXCL5. It was also concluded that metabolites like lactate and ROS may influence these cells, highlighting the need for further analysis of conditioned medium (CM) content using advanced approaches.

### ACADEMIC ACTIVITIES

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## KEY WORDS

- ✓ Breast Cancer
- ✓ Memory T Cell
- ✓ CCL5
- ✓ CD4 TRM
- ✓ CD8 TRM

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