

2026 의생명과학연구소 세미나

- 일시: 2026년 08월 26일(수) 오후 2시
- 장소: 강원대학교 의생명과학관 B-125호

- 제목: Systemic Human Immune Alterations Following B-Cell Depletion in Autoimmune Neurological Disorder
- 연사: 문정현 교수 (부산대학교 의학전문대학원)

Multiple sclerosis (MS) is a complex genetically mediated autoimmune disease of the central nervous system where anti-CD20 (Ocrelizumab)-mediated B cell depletion is remarkably effective in the treatment of early disease. While previous studies investigated the effect of B cell depletion on select immune cell subsets using flow cytometry-based methods, the therapeutic impact on patient immune landscape is unknown. We explored how B cell depleting therapies modulate the immune landscape using single-cell RNA sequencing (scRNAseq). We demonstrate that B cell depletion leads to cell type-specific changes in the abundance and function of CSF macrophages and peripheral blood monocytes. A CSF-specific macrophage population with an anti-inflammatory transcriptomic signature and peripheral CD16+ monocytes increased in frequency post-B cell depletion. This was accompanied by increases in TNF-alpha messenger RNA and protein in monocytes post-B cell depletion, consistent with the finding that anti-TNF-alpha treatment exacerbates autoimmune activity in MS. In parallel, B cell depletion induced changes in peripheral CD4+ T cell populations, including increases in the frequency of TIGIT+ regulatory T cells and marked decreases in the frequency of myelin peptide loaded-tetramer binding CD4+ T cells. This study provides an exhaustive transcriptomic map of immunological changes, revealing different cell-type specific reprogramming as a result of B cell depletion treatment in MS.

- 주 최: 강원대학교 의생명과학연구소