Apr 12th, 11:00 AM - 2:00 PM

# Migration Frustrations of miR-146a Regulation

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Research & Scholarship SYMPOSIUM

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The autoimmune disease, Sjögren's Syndrome (SS), causes the degradation of salivary and lacrimal glands due to an influx of immune cells. In previous studies, a significant increase in miR-146a was observed in the peripheral blood mononuclear cells of SS patients. Since immune cell infiltration is critical in SS pathogenesis, the following research examines the effect of miR-146a on cell migration. We hypothesize that transfecting THP-1 human monocytes with synthetic miR-146a will downregulate migration of the monocytes based on other studies stating that miR-146a downregulates migration in vivo. In order to execute our experiment, we transfected THP-1 cells with synthetic miR-146a and incubated the monocytes for 3 days. In the migration assay, the cells were transferred to a semipermeable membrane and MCP-1 was introduced as a chemoattractant. qPCR was also used to confirm the success of the transfection. When compared to mock-transfected and negative control cells, a significant increase of migration was observed in the THP-1 transfected cells (p value = 0.002 and 0.01, respectively). The qPCR also revealed an upregulation of miR-146a expression.

In previous studies miR-146a directly inhibited TRAF6. Considering this evidence, we decided to knockdown TRAF6 with siRNA to observe the migrational effect. Our preliminary data shows that knockdown of TRAF6 decreases migration. Further experimentation must be conducted in order to ascertain the signaling pathway of miR-146a in migration, since it appears that miR-146a does not affect migration through TRAF6. Our data suggests that the original hypothesis was incorrect and that miR-146a stimulates migration of THP-1 cells through an undetermined mechanism.