

# 6<sup>th</sup> Global Ophthalmologists Annual Meeting

May 16-18, 2016 Osaka, Japan

## Signaling between the ciliary epithelium and the trabecular meshwork is mediated via exosomes

Elie Beit-Yannai

Ben-Gurion University of the Negev, Israel

The trabecular meshwork TM is dynamic tissue responding to pressure stimuli and cellular signaling. TM increase in drainage resistance had been attributed to increase in intra ocular pressure, a major risk for glaucoma development. In previous study in our lab we were able to show that signaling between the non-pigmented ciliary epithelium (NPCE) and the TM exist, resulting in changes in protein expression and activity. We hypothesized that these intra drainage system tissue communications is carried, at least partially by exosomes. Exosomes are nanoparticles carrying a cargo of proteins, mRNAs and micro-RNAs which are believed to deliver signaling molecules that affect this outflow. Exosomes were extracted from NPCE cell line, characterized for size, Zeta potential, protein content and specific exosomes markers. Then, NPCE derived exosomes were incubated with human TM cell line and the exosomes fate was traced using confocal microscopy. Signaling pathway changes and their downstream effects were examined. We were able to show that NPCE derived exosome accumulate along time in the TM cells cytosol with specificity. Within the TM cells the NPCE derived exosomes interfere with signaling pathway resulting in changes in key adhesion molecules.

### Biography

Elie Beit-Yannai has completed his PhD at the Hebrew University Jerusalem, Israel. He leads research teams at the bio-tech industry and joined Ben-Gurion University in 2004. He has published more than 25 papers in reputed journals.

[bye@bgu.ac.il](mailto:bye@bgu.ac.il)

### Notes: