



Harold E. Eisenberg Research Scholar Award Announcement



We are pleased to welcome Ronen Sumagin, PhD, assistant professor in the Department of Pathology at Northwestern University Feinberg School of Medicine, as the 2017-2018 Harold E. Eisenberg Research Scholar. Over the past 10 years, Dr. Sumagin's research has focused on leukocytes (white blood cells) and their interactions with endothelial and epithelial cells. His lab studies leukocyte trafficking across the endothelial and epithelial barriers under conditions of inflammation, with the goal of identifying new/improved therapeutic approaches aimed at resolution of mucosal inflammation. Inflammation in the intestine is one of the key risk factors for colorectal cancer. Despite recent advances in identifying risk factors for colorectal cancers, these cancers are still the third most diagnosed and lethal cancers in the US.

Immune cells, termed neutrophils, protect our body against invading pathogens. When neutrophils accumulate in tissue, however, they also can cause recurring injury to cells of the gastrointestinal tract. The resulting chronic inflammation in the colon is a hallmark of inflammatory bowel diseases (IBDs), and is a well-recognized risk factor for the development of colorectal cancer. Thus, patients with IBD are at a significantly increased risk of developing colorectal cancer. Findings suggest that neutrophils contribute to transformation of normal cells into cancerous ones (by increasing the occurrence of mutations and by inhibiting the ability of cells to repair these mutations), thus promoting cancer development. Dr. Sumagin and his team have identified the specific factors responsible for this action of neutrophils, as well as target DNA repair genes that get inactivated by these factors, leading to cancer. Importantly, these findings are not limited to IBD patients, but are characteristic of many colorectal cancers.

Hence, with the support of the Harold E. Eisenberg Foundation, Dr. Sumagin's laboratory aims to define the mechanism of action of these harmful factors, and to test whether neutralizing them can prevent increased mutations and cancer. As their work moves forward, Dr. Sumagin and his team plan to explore whether specific DNA repair genes that we lose due to the action of neutrophil-derived factors can be used as prognostic biomarkers, as well as targeted for treatment of colorectal cancer.

Dr. Sumagin has published more than 30 peer reviewed publications and has previously received awards from the National Institutes of Health, the Digestive Health Foundation, and the American Cancer Society. Dr. Sumagin received his doctorate degree in Biomedical Engineering from the University of Rochester, Rochester, NY and completed a postdoctoral fellowship in Experimental Pathology at Emory University. He joined Feinberg in 2014.