

## **Resolution of Colitis: A Translational Study**

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As the name suggests, inflammatory bowel disease is characterized by inflammation of bowel. A great deal of research has gone into better understanding the factors that contribute to the lining of the intestine becoming inflamed (i.e., swollen, red, ulcerated). Much of this research has focused on identifying the chemical signals produced in the intestinal tissue that regulate the processes of inflammation and healing. In previous studies performed in our lab, we began to study something very different; that is, the chemical signals produced in the body that turn off inflammation, and promote healing. It turns out that there are several different types of chemicals produced in our bodies which are anti-inflammatory signals. These are the chemicals that coordinate a return of a tissue to a normal state after it has been injured or infected. What we found in studies of rats was that the production of some of these important anti-inflammatory signals was depressed in the rats that had colitis. We found that if we injected these anti-inflammatory substances into the rats, we could make the colitis heal more quickly.

In our current project, we are trying to *translate* the rat studies into the human. We are first trying to determine if the production of anti-inflammatory chemicals in the intestine of people with colitis is altered as compared to that in healthy people. Our preliminary data are exciting, because we have found that one of the anti-inflammatory chemicals is indeed under-produced in the colon of patients with colitis. We are now trying to determine *why* the production of that anti-inflammatory chemical is reduced. If we can find this out, we may be able to design a new therapy that would boost the production of the anti-inflammatory chemical, and thereby be able to bring a patient into remission more quickly and without significant side effects. We are encouraged by studies in rats that we have performed that show that this strategy works very well.