

**“Characterization of susceptibility genes/molecules for inflammatory bowel disease”**  
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This project is aimed at defining the molecular pathways conferring risk for Crohn’s disease (CD). The research focuses on two proteins implicated in CD, *CARD15* and *OCTN1*. *CARD15* is normally expressed in blood cell populations as well as the epithelial cells lining the intestinal lumen. Variants in the *CARD15* gene and protein are known to confer risk for CD, but the pathways linking these variants to disease are not well understood. Our group has shown that variants in another gene that encodes a protein known as *OCTN1* are also associated with CD. Moreover, the *CARD15* and *OCTN1* gene variants appear to synergize with one another in conferring risk for CD. *OCTN1* functions as a transporter, i.e. a cell receptor that carries various compounds from outside to inside the cell. We have shown that *OCTN1* and *CARD15* can interact with one another and that this interaction regulates the function of *CARD15*. Our data also reveal this *OCTN1*-*CARD15* interaction to be enhanced in cells expressing the CD-associated *OCTN1* mutation. These molecular data support our genetic data and suggest that the *OCTN1* to *CARD15* pathway plays integral role in CD and that its modulation by selective therapeutic agents may provide an effective therapeutic strategy in this disease.