

Poster presentation

## **PII-01. Extensive intestinal damage underlies microbial translocation in the GI tract of chronically SIV-infected Rhesus macaques**

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### **Background**

Activation of the immune system is a hallmark of the chronic phase of HIV infection and predicts disease progression better than either plasma viral load or CD4 T cell count. We recently demonstrated that one cause of immune activation in chronically HIV-infected humans and chronically SIV-infected rhesus macaques was translocation of microbial products.

### **Methods**

Here, using immuno histochemistry and quantitative image analysis, we demonstrate that microbial products translocate from the lumen of the intestine into the lamina propria and into draining and peripheral lymph nodes.

### **Results**

We find: 1) microbial products can be found in the lamina propria of the large and small bowel and draining and distal lymph nodes of chronically SIV-infected rhesus macaques; 2) the mechanisms underlying microbial translocation involve breakdown of the tight epithelial barrier of SIV-infected animals; 3) the degree of epithelial breakdown correlates with the degree of microbial translocation; 4) epithelial barrier breakdown and microbial translocation begin during the acute phase of infection

and; 5) neither epithelial barrier breakdown nor infiltration of microbial products into the lamina propria occur during the chronic phase of SIV infection of sooty mangabeys.

### **Conclusion**

Taken together, these data provide mechanistic insight underlying microbial translocation and persistent immune activation in chronically SIV-infected rhesus macaques and highlight the importance of understanding the molecular mechanisms driving this process as a means to develop therapeutic targets to attenuate chronic immune activation in HIV-infected individuals.