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## Experimental Biology 2015 (AAA - Invited Speaker)

**Session:** 7450 - Breaking the Barrier: The Gastrointestinal Tract in Health and in Inflammatory Bowel Disease

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### PUBLICATION PREVIEW

#### **Role of chaperones in healthy bowel and IBD**

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The chaperoning system is the whole complement of chaperones, co-chaperones and chaperone co-factors of the body that preserves cell and tissue homeostasis. Its structural and/or functional defects can cause pathologic conditions, named chaperonopathies. Large bowel homeostasis includes a healthy status of the mucosal tissues and the microbiota. An alteration of one of them may determine, in turn, modifications of the other. Molecular chaperones of bacteria and human origin have been implicated in inflammatory bowel disease (IBD). In IBD chaperone levels usually increase and their cellular and subcellular localization change. This is considered a physiological stress-response of mucosal cells to inflammation. However, chaperones also play active roles in IBD pathogenesis, e.g. perpetuate inflammation. Therefore, IBD can be classified among the chaperonopathies. This classification opens the door to the design and application of new forms of treatment targeting the chaperones, namely chaperonotherapy.

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