

**Title** The gut. A key metabolic organ protected by lactoferrin during experimental systemic inflammation in mice

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**Abstract** The gastrointestinal tract may be viewed as an ecologic system in which a balance between the host and bacterial flora exists. Two major host components appear to be involved in maintaining this balance. The first is a non-specific structural barrier provided by the epithelial layer of the gastrointestinal mucosae. The second component involves functional immunological elements found in the mucosal and submucosal compartments, e.g., gut associated lymphoid tissue. When gut integrity is disrupted by invasive pathogens or by trauma, a myriad of pro-inflammatory mediators are released from cells in the gut wall that exert actions in the tissue or gut lumen. One of these mediators is lactoferrin, and iron binding protein found in high concentration in most human exocrine secretions. Despite controversies on its physiological role, evidence is emerging that lactoferrin plays an important role in host defense against toxic metabolites and antigenic components of potential pathogens<sup>2-4</sup>. This manuscript is intended to provide an overview of work related to lactoferrin's modulatory roles in inflammation, and to present observations from experimental studies on the preservation of intestinal structure and function by lactoferrin during intestinal inflammation. The possibility that lactoferrin limits the autodestructive inflammatory responses presents a new alternative for the future management of systemic inflammation.