



Dipartimento di Biotecnologie e Bioscienze – UNIMIB

Thursday, May 9, 2024, 4:30 p.m., U4-TELLUS building, room U4-01

IFN-λ control of intestinal repair

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Abstract: Tissue damage and repair are hallmarks of the inflammatory process. Despite a wealth of information on the mechanisms that govern tissue damage, mechanistic insight on how inflammatory mediators affect repair is lacking. Here, we investigated how interferons influence tissue repair after damage to the intestinal mucosa driven by inflammatory or physical injury. We found that type III, but not type I, interferons delay epithelial cell regeneration by inducing the upregulation of ZBP1, Caspase-8 activation, and cleavage of Gasdermin C (GSDMC). Cleaved GSDMC drives epithelial cell death by pyroptosis and delays the re-epithelialization of the large or small intestine after colitis or irradiation, respectively. We also found that the type III interferon/ZBP1/Caspase-8/GSDMC pathway is activated in patients with inflammatory bowel disease. Our findings highlight a molecular signaling cascade that affects the outcome of the immune response by delaying tissue repair, which has important implications for human inflammatory disorders.

Host: Francesca Granucci

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