HOSTING GROUPS FOR INTERNATIONAL MOBILITY

Smooth muscle Physiology

The scientific research of group focuses on the physiology of smooth muscle, mainly in the gastrointestinal (GI) tract, with a strong emphasis on neurogastroenterology and inflammation. The mechanical activity of GI smooth muscle and its neural regulation are studied through an integrated approach combining pharmacological, biochemical, and molecular techniques.

At first studies centered on identifying chemical mediators that regulate motility in various regions of the rodent GI tract under physiological conditions. In recent years, the focus has expanded to investigating the mechanisms driving inflammation in the GI tract, using a rat model of inflammatory bowel disease (IBD) induced by 2,4-dinitrobenzenesulfonic acid (DNBS).

Key research goals include:

- Investigation of the influence of intrinsic and extrinsic regulatory factors in the homeostasis of GI tract and in the pathophysiology of GI disorders.

- Identification and validation of novel pharmacological targets for restoring intestinal function in IBD

- Characterization of innovative compounds with therapeutic potential in the GI system.

Team members: ROSA SERIO MARIA GRAZIA ZIZZO

Selected publications:

- Zizzo MG, Auteri M, Amato A, Caldara G, Nuzzo D, Di Carlo M, Serio R. Angiotensin II type II receptors and colonic dysmotility in 2,4-dinitrofluorobenzenesulfonic acid-induced colitis in rats. Neurogastroenterol Motil. 2017 Jun;29(6). doi: 10.1111/nmo.13019.
- Zizzo MG, Caldara G, Bellanca A, Nuzzo D, Di Carlo M, Serio R. Preventive effects of guanosine on intestinal inflammation in 2, 4-dinitrobenzene sulfonic acid (DNBS)-induced colitis in rats. Inflammopharmacology. 2019 Apr;27(2):349-359. doi: 10.1007/s10787-018-0506-9.
- Zizzo MG, Caldara G, Bellanca A, Nuzzo D, Di Carlo M, Serio R. PD123319, angiotensin II type II receptor antagonist, inhibits oxidative stress and inflammation in 2, 4-dinitrobenzene sulfonic acid-induced colitis in rat and ameliorates colonic contractility. Inflammopharmacology. 2020 Feb;28(1):187-199. doi: 10.1007/s10787-019-00619-z..
- Zizzo MG, Bellanca A, Amato A, Serio R. Opposite effects of dopamine on the mechanical activity of circular and longitudinal muscle of human colon. Neurogastroenterol Motil. 2020 Jun;32(6):e13811. doi: 10.1111/nmo.13811.
- Zizzo MG, Cicio A, Raimondo S, Alessandro R, Serio R. Age-related differences of γaminobutyric acid (GABA)ergic transmission in human colonic smooth muscle. Neurogastroenterol Motil. 2022 Mar;34(3):e14248. doi: 10.1111/nmo.14248