

Special Issue

Molecular Response to Endotoxin

Message from the Guest Editors

The neuroendocrine response to inflammation after endotoxin exposure is a broad response that includes fever, anorexia, and a number of hormonal and metabolic changes which are necessary to adapt the body to this new situation. This complex response leads to an increase in catabolism and a decrease in anabolism. Endotoxin is a well-known modulator of hypothalamic and anterior pituitary hormones. The acute phase of inflammation induces a decreased activity of the thyroid and gonadal axes, with an increased activity of the adrenal axis. Inflammation also affects the hypothalamic neurons that regulate feeding behavior and basal metabolism. Several data suggest that sepsis or high-grade hypothalamic inflammation is associated with anorexia, decreased fat mass, skeletal muscle wasting, and weakness. By contrast, low-grade hypothalamic inflammation has been associated to obesity and insulin resistance. Both conditions increase morbidity and mortality in several diseases. Therefore, it is important to understand the molecular mechanisms by which inflammation modifies the hypothalamic regulation of energy homeostasis.

Guest Editors

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Deadline for manuscript submissions

closed (30 November 2021)



International Journal of Molecular Sciences

an Open Access Journal
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Impact Factor 4.9
CiteScore 8.1
Indexed in PubMed



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Molecular Sciences*
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