



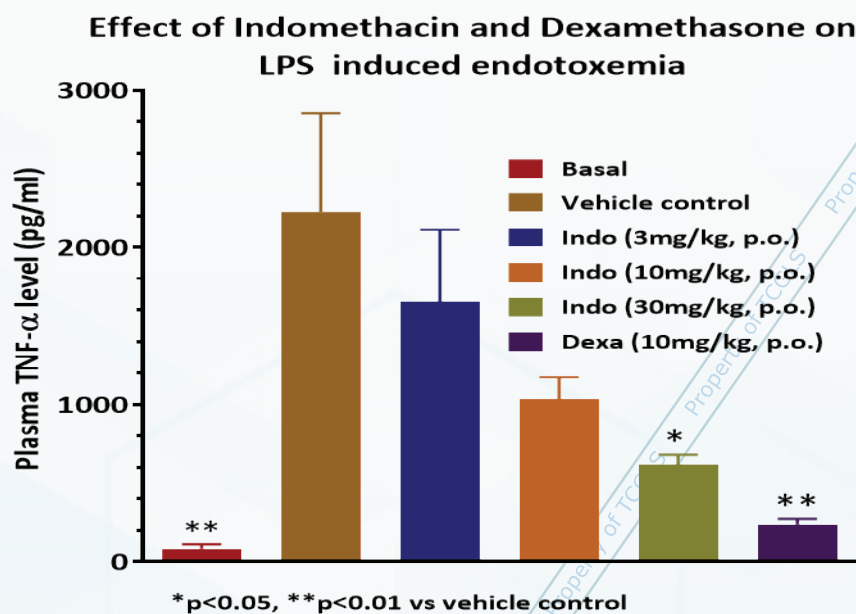
LPS-Induced Endotoxemia Model in Inflammation Research

The lipopolysaccharide (LPS)-induced endotoxemia model is a well-established experimental system employed to investigate systemic inflammation and sepsis-like conditions in animals, particularly rodents. LPS, a structural component of the outer membrane of Gram-negative bacteria, acts as a potent activator of the innate immune system. When administered, typically via intraperitoneal (IP) or intravenous (IV) injection, it provokes a strong inflammatory response characterised by the release of several proinflammatory cytokines, including Tumour Necrosis Factor-alpha (TNF- α), Interleukin-1 beta (IL-1 β), and Interleukin-6 (IL-6). This model provides an invaluable experimental platform for elucidating the pathophysiological mechanisms underlying systemic inflammation, as well as for evaluating the efficacy of potential anti-inflammatory and immunomodulatory therapies.

Model Validation

- **Animals:** Male BALB/c mice
- **Induction:** Intraperitoneal injection of LPS solution

- **Endpoint:** Plasma level of TNF- α measured 90 minutes post LPS administration



Conclusion

The LPS-induced endotoxemia model continues to be a cornerstone in preclinical inflammation and sepsis research. The LPS-induced endotoxemia model effectively reproduces essential features of the systemic inflammatory response, making it a valuable platform for the rapid preclinical evaluation of novel anti-inflammatory therapeutics.