

## **Overview of neurological mechanism of pain profile used for animal “pain-like” behavioral study with proposed analgesic pathways**

### **ABSTRACT**

Pain is the most common sensation installed in us naturally which plays a vital role in defending us against severe harm. This neurological mechanism pathway has been one of the most complex and comprehensive topics but there has never been an elaborate justification of the types of analgesics that used to reduce the pain sensation through which specific pathways. Of course, there have been some answers to curbing of pain which is a lifesaver in numerous situations—chronic and acute pain conditions alike. This has been explored by scientists using pain-like behavioral study methodologies in non-anesthetized animals since decades ago to characterize the analgesic profile such as centrally or peripherally acting drugs and allowing for the development of analgesics. However, widely the methodology is being practiced such as the tail flick/Hargreaves test and Von Frey/Randall–Selitto tests which are stimulus-evoked nociception studies, and there has rarely been a complete review of all these methodologies, their benefits and its downside coupled with the mechanism of the action that is involved. Thus, this review solely focused on the complete protocol that is being adapted in each behavioral study methods induced by different proinflammatory agents, the different assessment methods used for phasic, tonic and inflammatory pain studies and the proposed mechanism of action underlying each behavioral study methodology for analgesic drug profiling. It is our belief that this review could significantly provide a concise idea and improve our scientists’ understanding towards pain management in future research.

**Keyword:** Nociceptive; Neuropathic; Inflammatory; Behavioral study; Phasic pain; Tonic and viscera pain; Analgesic profile