

## Special Issue

# Recent Progress of Opioid Research, 2nd Edition

### Message from the Guest Editors

The endogenous opioid system plays a crucial role in the regulation of pain sensitivity and stress responses. In addition, many prescription opioids are typically prescribed to treat moderate to severe pain. Moreover, in addition to their advantageous properties as analgesics, prescription opioids exert a variety of side effects, including constipation and respiratory depression, as well as the formation of tolerance and dependence. Opioid use disorders caused by prolonged opioid use and overdose have become a major social problem in recent years. On the other hand, the detailed mechanisms of these effects and side effects, as well as the mechanisms of pain, dependence, and emotional regulation by endogenous opioids, remain unclear. In particular, most prescription opioid analgesics target the  $\mu$  opioid receptor, but they also exert effects on the  $\kappa$  and  $\delta$  subtypes; recently, the effects of subtypes other than  $\mu$  have attracted attention and are being investigated as targets for analgesics and for the discovery of other drugs. In this Special Issue, we would like to highlight various recent studies related to opioids.

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