



## The Analgesic Effect of Phencyclidine Derivatives in Mice

Arezoo Ashnagar<sup>1</sup>, Samira Sepahvand<sup>2</sup>, Nima Naderi<sup>3</sup>, Abbas Ahmad<sup>4</sup>

<sup>1</sup>Students' Research Committee, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

<sup>2</sup>Islamic Azad University, Karaj branch, Karaj, Iran

<sup>3</sup>Department of Pharmacology and Toxicology, School of Pharmacy, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

<sup>4</sup>Department of Chemistry, Faculty of science, Islamic Azad University, Karaj branch, Karaj, Iran

**Abstract:** Phencyclidine (phenylcyclohexylpiperidine or PCP) is an aminocyclooctyl aryl compound. Due to complex spectrum of its pharmacologic responses as well as its complex interaction with the CNS, this drug has attracted the attention of many researchers. PCP administration can produce such effects as CNS stimulation and suppression, hallucinogenic effects and dose-dependent analgesic activity.

In this study, the analgesic effects of PCP's five thiophene and Benzothiophene derivatives were evaluated.

Analgesic effect of PCP's derivatives were evaluated using acetic acid-induced righting and tail-flick tests of visceral and thermal-induced pain, respectively.

Tenocyclidine (phenylcyclohexyl piperidine or TCP), and the non-hydroxylated benzothiophene derivative (compound II) at the dose of 10 mg/kg showed analgesic effects in visceral pain model (acetic acid-induced righting test) while none of the compounds show analgesic effect in tail-flick test at the dose mentioned above.

Our results suggest that none of the new phencyclidine derivatives could produce significant analgesic effects compared with the standard compound, TCP. Moreover, addition of hydroxyl group, but not benzothiophene group, to TCP molecule might improve its analgesic activity.

**Keyword:**

Phencyclidine derivatives, analgesic, mice