Diabetic neuropathy (DN) is a common complication in diabetes mellitus (DM). The streptozotocin (STZ)-induced diabetic rodent is the most commonly used animal model of diabetes and increased sodium channel expression and activity was revealed in this models. The role of altered Na channel activity in the pathogenesis of DN is still unknown. Several recent studies have implicated the investigation of the activity of the novel anticonvulsant compounds for the other pathophysiological issues such as neuropathic disorders. Nafimidone is an example of (arylalkyl) azoles, which possess a profile of activity similar to that of phenytoin or carbamazepine but distinct from barbiturates or valproic acid. At this study, we evaluated the effect of three different nafimidone derived (arylalkyl)azole compounds on disorders of thermal pain sensation in diabetic mice. We used hot and cold plate, and tail-immersion tests for assessment of thermal nociceptive responses. We found that Valproic acid derivatives among the nafimidone oxim esters which we have used was the most effective on loss of sensation in terms of three tests.

References