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Allodynia reduction ability for a single compound ABL-006

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Background: ABL-006 was purified from an herb traditionally used for multi-purposes including for snake bites, alleviating swelling in the wound area, and to reduce heat. It is reported anti-inflammatory and anti-oxidation. Aim: To test the ability to reduce allodynia for ABL-006. Material and methods: Male 30g BalbC mice of 8 weeks of age were divided into 3 groups: 1. non-operated control (N group), 2. Sciatic nerve transected and treated with saline (T-saline), 3. Sciatic nerve transected and treated with the compound (T-Test). For the sciatic nerve transection, the mice were operated under general anesthesia using isoflurane. The right sciatic nerve was sutured at 2mm from the distal end, and the last 2mm of nerve was removed. The sural branch was left un-transected. An antibiotic was administered daily after operation. ABL-006 dissolved in distilled water was administered daily. It was injected intraperitoneally at 5mg/kg body weight in 150 μ l volume. The development of pain was assessed on 3rd, 7th, and 14 day in terms of mechanical allodynia by von Frey tests. The effect of withdraw threshold for both right (operated) and left (non-operated) hind paws were measured. Both right (operated) and left (non-operated) legs were measured. Results: allodynia was induced in the T-saline group. The thresholds for inducing allodynia for this treatment were 0.02g (3days) and 0.008g (7days). Immunostaining with IL-1 antibody demonstrated inflammatory reaction in the spinal cord at L4-L6 region. No allodynia behavior was observed in the N group. For the T-test group, the average threshold for inducing allodynia was 0.07g at 3 days operation, 0.17 \pm 0.2g at 7 days, and 0.23 \pm 0.32g at 14 days. The allodynia threshold was higher in the T-test compared to the T-saline group at 7 days (0.17g vs 0.008g, N=3 for T-test group), indicating alleviation of the neurological pain. IL-1 staining in the spinal cord was prominent at 3 days, but reduced at 7 days. Conclusion: These data suggested that ABL-006 reduces the threshold for mechanical allodynia from sciatic nerve transection, and the observed behavior was associated with reduction in inflammatory cytokine produced in the CNS component.