

Safety assessment and analgesic activity (central and peripheral) of Pomegranate (*Punica granatum* L.) hydroalcoholic peel extract grown in East of Algeria, by using acetic acid, hot plate and tail immersion tests.

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In view of medicinal importance of pomegranate grown locally in eastern of Algeria, The current study was based on the valorization of *Punica granatum* L. peel hydroalcoholic extract, by the determination of its acute toxicity and an evaluation of its analgesic activity by *in vivo* approach in rats using acetic acid, hot plate and tail immersion methods, the extract was used at the doses of 0.75, 1.50 and 3.00 g/kg while acetylsalicylic acid was used as a standard reference drug (0.10 g/kg). In the acetic acid-induced model, the plant extract and the reference drug significantly ($p < 0.0001$) reduced the abdominal writhing in rats when compared to the control group, by increasing the percentage inhibition of writhing in a dose dependent manner. In the hot plate and tail immersion models, the extract like the acetyl salicylic acid showed high analgesic activity in a dose dependent manner and significantly ($p < 0.0001$) increasing the pain reaction time. These results suggest significant analgesic potential of *Punica granatum* L. peel extract which may act through both peripheral and central mechanisms; probably due to the ability of its phyto-constituents to induce mechanisms of anti-inflammatory effects.

Keywords: *Punica granatum* L., Acute toxicity, analgesic activity, acetic acid, hot plate, tail immersion.