

# **Capsaicin and nonivamide as novel skin permeation enhancers for indomethacin**

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## **Abstract**

The study was conducted in vitro to investigate the changes of indomethacin transdermal permeation pretreated by capsaicin and nonivamide, two compounds chemically similar to Azone. The combined effect of low frequency ultrasound (20 kHz) and enhancers on the indomethacin permeation was also evaluated. The experimental data demonstrated that capsaicin and nonivamide significantly enhanced the flux of indomethacin across nude mouse skin. Enhancement effects of both analogues were very similar and depended predominantly on the concentration tested. Histological examination coupled with visual scores indicated the safety of capsaicin and nonivamide on skin structure. Simultaneous application of ultrasound and enhancers significantly increased skin permeation of indomethacin compared with either ultrasound or enhancers alone. Better effect was obtained by the combination with capsaicin than nonivamide.