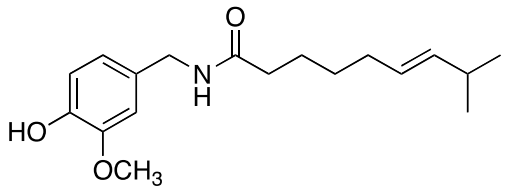
Capsaicin



【化合物】Capsaicin
【測定機器】Radiography; HPLC
【対象】動物（ラット）
【代謝実験】 Separate sets of animals (150 - 160 g) were orally administered the three spice principles at dosages of 30 mg (capsaicin), 170 mg (piperine) and 500 mg (curcumin) / kg body weight. The tissue concentrations of administered spice compounds were determined by HPLC. Maximum distribution of 24.4 per cent of administered capsaicin was seen at 1 h, while no intact capsaicin was detectable after 4 days. Absorption of capsaicin was about 94 per cent and very rapid relative to other two compounds. A maximum of 10.8 per cent of administered piperine was seen in tissues at 6 h. Absorption of the administered piperine was about 96 per cent. Curcumin concentration was maximum in the intestine at 1 h; maximum in blood at 6 h and remained at significantly higher level even at 24 h. About 63.5 per cent of the curcumin dose was absorbed. Only a small portion of the administered dose of capsaicin (< 0.1%) and curcumin (0.173 %) was excreted in urine, whereas piperine was not detectable in urine. Enhanced bioavailability of curcumin was evidenced when the same was orally administered concomitant with piperine. Intestinal absorption of curcumin was relatively higher when administered concomitantly with piperine, and it stayed significantly longer in the body tissues. Intact curcumin was detected in brain at 24, 48 and 96 h with a maximum at 48 h. Bioavailability of curcumin can be improved by co-administration with piperine. [Suresh et al., *Indian J Med Res* **131**, 682-691 (2010)]

【参考文献】

Sanjay Chanda, Mohammad Bashir, Sunita Babbar, Aruna Koganti, and Keith Bley, In vitro hepatic and skin metabolism of capsaicin. *Drug Metabolism and Disposition* **36**: 670–675 (2008).

Sunita Babbar, Jean-Francois Marier, Mohamad-Samer Mouksassi, Martin Beliveau, Geertrui F. Vanhove, Sanjay Chanda, and Keith Bley, Pharmacokinetic analysis of capsaicin after topical administration of a high-concentration capsaicin aptch to patients with peripheral neuropathic pain. *Ther Drug Monit* **31**: 502–510 (2009).

Bruce K. Bernard, Kazuyuki Ubukata, Ryuichi Mihara, Yoshiaki Sato, and Hiroyuki Nemoto, Studies of the toxicological potential of capsinoids, XI: Pharmacokinetic and tissue distribution study of ^{14}C-dihydrocapsiate and metabolites in rats. *International Journal of Toxicology* **29** (2S): 3S-14S (2011). DOI: 10.1177/1091581809357082.

D. Suresh, K. Srinivasan, Studies on the in vitro absorption of spice principles –curcumin, capsaicin and piperine in rat intestines. *Food and Chemical Toxicology* **45**: 1437–1442 (2007).

D. Suresh & K. Srinivasan, Tissue distribution & elimination of capsaicin, piperine & curcumin following oral intake in rats. *Indian J Med Res* **131**, 682-691 (2010).