

ラット及びモルモットの遊離肝細胞における フェンタニールの代謝

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Metabolism of Fentanyl in Isolated Hepatocytes from Rat and Guinea Pig

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ABSTRACT: The metabolites of fentanyl (FT) were identified in isolated rat and guinea pig hepatocytes by gas chromatography-mass spectrum (GC-MS) combined with the stable isotope tracer technique. Isolated hepatocytes were prepared by the collagenase perfusion method and were incubated with a 0.3mM equimolar mixture of FT and FT- d_5 citrate in a rotating round-bottomed flask at 37 °C. The metabolites were extracted with chloroform. The extracts were subjected to GC and GC-MS after trimethylsilylation.

Characteristic doublet peaks in the mass spectra indicated the presence of 6 and 7 metabolites in rat and guinea pig hepatocytes, respectively. 4-(*N*-Propionylanilino) piperidine was identified as the main metabolite in both species. Other metabolites were oxidation products of the phenethyl, piperidine and propionyl groups of FT. Oxidation of the anilino ring and hydrolysis of the amide bond were not found in hepatocytes.

抄録 ラット及びモルモットの遊離肝細胞におけるフェンタニールの代謝について安定同位体トレーサー法により検討した。遊離肝細胞系にフェンタニール及び重水素標識フェンタニールを加えてインキュベートし、そのクロロホルム抽出物についてイオンクラスターを指標に代謝物をGC-MSにより検索した。その結果、主代謝物として脱フェネチル体が検出されると共に、フェネチル基、ピペリジン環、プロピオニル側鎖の水酸体が生成することが判明した。

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