In vitro におけるプルロニックF-127ゲルからのジクロフェナク，ヒドロコルチゾンの放出性

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In vitro release characteristics of diclofenac and hydrocortisone from Pluronic F–127 gels

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ABSTRACT: The release of diclofenac and hydrocortisone from the aqueous gels of Pluronic F–127 (PF–127) has been studied in an *in vitro* membraneless release model. It has been found that the release rate decreases with increasing PF–127 concentration, but increases with increasing temperature. A linear relationship was obtained between the apparent release rate and the initial drug concentraion. The release of diclofenac was largely dependent upon the gel pH and was maximal at pH around 7, whereas in the case of hydrocortisone, no pH–dependency was observed. The results obtained suggest that the drug is released by diffusion through the extramicellar aqueous channels of the gel matrix. Further, among the various factors affecting drug release, the pH in gel formulations appears to be very important when the formulated drug is a weak acid or base.

抄録　ポリオキシエチレンーポリオキシプロピレンのブロック重合体の一種であるプルロニックF-127（PF-127）は、界面活性を有し、毒性が極めて低く、又、熱可逆性水性ゲルを形成する性質をもつ。本研究では、経皮吸収型製剤基剤としてのPF-127の有用性を評価する目的で標記薬物のPF-127水性ゲルからの放出性に及ぼす要因について基礎的検討を行った。その結果、基剤中のPF-127濃度、薬物初濃度、温度の他に、弱酸性又は弱塩基性薬物の場合にはゲルpHが放出性に大きく関与し、至適pHが存在することが明かとなった。