

# ヘリコバクター・ピロリ除菌を目的とした 徐放性液剤の開発

片山博和、西村武也、越智 悟、鶴田泰人、山崎有理子、  
柴田恵子、吉富博則

*Biol. Pharm. Bull.*, 22(1), 55 - 60 (1999)

## Sustained Release Liquid Preparation Using Sodium Alginate for Eradication of *Helicobacter pylori*

Hirokazu Katayama, Takeya Nishimura, Satoru Ochi,  
Yasuto Tsuruta, Yuriko Yamasaki, Keiko Shibata,  
and Hironori Yoshitomi

**ABSTRACT** We prepared a new liquid preparation for eradication of *Helicobacter pylori* (HP), and examined drug release *in vitro* and *in vivo*. The liquid preparation mainly consisted of sodium alginate (AG) aqueous solution containing ampicillin (ABPC), an antibiotic drug, or methylene blue, a dye. Drug release was retarded by Ca pretreatment (0.10 M, 20 sec) of the AG preparation in *in vitro* drug release studies due to gel-formation. In *in vivo* experiments, the AG preparations were administered orally to rats. The rats were divided into two group, with or without pre-administration of ranitidine hydrochloride (RH, H<sub>2</sub>-blocker). The total remaining % of ABPC in the stomach was high in the rats administered the AG preparation compared to the ABPC solution. The AG preparation might float in the stomach without adhering to the gastric wall in the rats without pre-administration of RH. The total remaining % of ABPC at 30 min was almost 100 % in the RH pre-administration rats administered the AG preparation, and about 80 % of the drug existed in "fraction 2" (implying adhesion of the preparation on the gastric mucus). Additional Ca administration could keep the ABPC concentrations in "fraction 2" high (mean 87 %) at 60 min due to the longer residence time and the retardation of the drug release to the gastric lumen. The preparation may be useful for eradication of HP.

抄録 抗生物質のアンプシリン（ABPC）及びアルギン酸Naよりなる液剤を調製し、*in vitro*及び*in vivo*で評価した。製剤をCa処理すると製剤表面がゲル化し、薬物放出が徐放化された。また、製剤の胃内滞留性もCa処理によって増大した。この液剤はピロリ菌の効率的な除菌を行うのに適すと考える。