膵リパーゼ感受性腸溶錠の評価. II *In Vivo* 評価

吉富博則、雫　禎弘、増田泰子、板倉理恵、岡本知子、
冨田久夫、西畑利明*1、後藤　茂*2

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Evaluation of Enteric Coated Tablet Sensitive to Pancreatic Lipase. II. *In Vivo* Evaluation

Hironori Yoshitomi, Yosihiro Shizuku, Yasuko Masuda,
Rie Itakura, Satoko Okamoto, Hisao Tomida,
Toshiaki Nishihata*1 and Shigeru Goto*2

Plain tablets containing a model drug, sulfamethizole(SMZ), were coated with triolein(TO), trilaurin(TL) and ethylcellulose(EC). The boiological behavior of the coated tablets(TOTL-Tab), which are pH independent and sensitive to pancreatic lipase, was investigated in humans. Results of the administration of the tablets with or without an antacid, under fasting and non-fasting conditions, and at 0.5h before and 0.5h after meals, were examined. A comparison of the *in vivo* behavior of SMZ after the administration of these tablets was done using the following data: the lag time of urinary excretion(U_{lag}), the total recovery percentage(X_u^∞), and the mean residence time after U_{lag} (MRT_{af}). A typical pH-sensitive tablet coated by cellulose acetate phthalate(CAP-Tab) was used as a reference. For the administration of a CAP-Tab alone, the U_{lag} obtained under both the non-fasting and fasting was longer than that of the plain tablet. However, U_{lag} after the administration of a CAP-Tab with an antacid became considerably shorter. This lag time was about the same as that obtained from the plain tablet, regardless of food ingestion. The obtained CAP-Tab MRT_{af} and X_u^∞ values were not significantly different in comparison to the plain tablets. Under the non-fasting condition, U_{lag}, MRT_{af} and X_u^∞ of TOTL-Tab were not affected by the co-administration of an antacid, and these values were virtually the same as those obtained from a CAP-Tab without an antacid. The urinary excretion data obtained

after the administration of TOTL-tab alone under fasting was analogues to the non-fasting case. When TOTL-tab was co-administrated with an antacid under fasting, the MRT_{af} was the much longer than that of the plain tablet, and the X_u^{∞} was almost a half that of the plain tablet. These results suggest that TOTL-tab is useful as an enteric release preparation sensitive to pancreatic lipase in humans, except when antacids are taken under a fasting condition.

新規開発した膵リパーゼ感受性腸溶性錠の人投与後の消化管内崩壊特性に及ぼす食事と制酸剤併用の影響を、モデル薬物スルファメチゾールの尿中排泄曲線より評価した。対照として用いた代表的なpH感受性腸溶錠である酢酸フタル酸セルロース被覆錠は、食事の有無に関わらず制酸剤併用時胃内で崩壊し腸溶性を失った。膵リパーゼ感受性腸溶性錠は制酸剤併用時にも胃内では崩壊せず、pH非依存性の腸溶性を示すことを確認した。絶食時投与では生物学的利用率が低下したが、食事前後の投与では全く問題はなく、新規メカニズムによる腸溶性製剤として十分有用であることが分かった。

*1 カンサス大学
*2 九州大学