

Title	Enhancement of acetylcholine release and contraction response by pirenzepine and atropine in the longitudinal muscle strips of guinea-pig ileum
Sub Title	
Author	藤本, 和子(Fujimoto, Kazuko) 大畑, 尚代(Ohata, Hisayo) 鈴木, 岳之(Suzuki, Takeshi) 川島, 紘一郎(Kawashima, Koichiro)
Publisher	共立薬科大学
Publication year	1987
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.32 (1987. ) ,p.130- 130
JaLC DOI	
Abstract	
Notes	学会講演要旨
Genre	Technical Report
URL	<a href="https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000032-0143">https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000032-0143</a>

慶應義塾大学学術情報リポジトリ(KOARA)に掲載されているコンテンツの著作権は、それぞれの著作者、学会または出版社/発行者に帰属し、その権利は著作権法によって保護されています。引用にあたっては、著作権法を遵守してご利用ください。

The copyrights of content available on the KeiO Associated Repository of Academic resources (KOARA) belong to the respective authors, academic societies, or publishers/issuers, and these rights are protected by the Japanese Copyright Act. When quoting the content, please follow the Japanese copyright act.

acid. Plasma was separated by centrifugation and was applied on to a Centricon-10®. The filtrate was obtained by centrifugation at  $5000 \times g$ . A  $100 \mu\text{l}$  portion of the filtrate was used for RIA. The filtrate subjected to alkaline hydrolysis served as blank. Under these bleeding conditions, AChE activity in the blood was confirmed to be completely inhibited. The recovery ratio of ACh added to plasma was  $103.6 \pm 5.0\%$ . Plasma concentrations of ACh were  $639 \pm 60$  in rabbits ( $n=6$ ),  $526 \pm 68$  in men ( $n=6$ ) and  $542 \pm 115$  pg/ml in women ( $n=8$ ). These data demonstrate that small amount of ACh is present in the blood of rabbits and humans. The origin of ACh in the blood is under investigation.

---

Japan J. Pharmacol., 43 (Suppl.) : 294P, 1987.

### **Enhancement of Acetylcholine Release and Contraction Response by Pirenzepine and Atropine in the Longitudinal Muscle Strips of Guinea-pig Ileum**

Kazuko FUJIMOTO, Hisayo OOHATA, Takeshi SUZUKI and Koichiro KAWASHIMA

藤本和子, 大畑尚代, 鈴木岳之, 川島紘一郎

〔第60回 日本薬理学会総会（昭和62年4月1日, 千葉市）で発表〕

We have recently shown that acetylcholine (ACh) released from the longitudinal muscle strips of guinea-pig ileum can be directly measured by a radioimmunoassay (RIA). The strips were suspended in an organ bath and perfused with normal or drug containing Krebs solution ( $0.4 \text{ ml/min}$ ). The strips were pretreated with methanesulfonyl fluoride, an irreversible cholinesterase (ChE) inhibitor. Electrical stimulation produced a contraction response and an increase in ACh release. Perfusion with pirenzepine ( $0.1$ — $10 \mu\text{M}$ ) and atropine ( $1$ — $100 \text{ nM}$ ) increased ACh release from the strips upon electrical stimulation. The contraction response was enhanced by perfusion with lower concentrations of both pirenzepine ( $0.1$  and  $1 \mu\text{M}$ ) and atropine ( $1$  and  $10 \text{ nM}$ ), while the enhancement of the contraction response was abolished at higher concentrations of these drugs. The data indicate that pirenzepine and atropine increase ACh release through the action on  $M_1$ -muscarinic autoreceptors under the present experimental conditions.  $M_1$ -muscarinic receptor in the myenteric neurons appears to be involved in the regulation of ACh release.

---

Japan J. Pharmacol., 43 (Suppl.) : 155P, 1987.