

|                  |                                                                                                                                                                                                                   |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title            | Effects of TRH and DN-1417 on high potassium-evoked acetylcholine release from rat basal forebrain slices determined directly by radioimmunoassay                                                                 |
| Sub Title        |                                                                                                                                                                                                                   |
| Author           | 鈴木, 岳之(Suzuki, Takeshi)<br>藤本, 和子(Fujimoto, Kazuko)<br>大畑, 尚代(Ohata, Hisayo)<br>川島, 紘一郎(Kawashima, Koichiro)                                                                                                      |
| Publisher        | 共立薬科大学                                                                                                                                                                                                            |
| Publication year | 1989                                                                                                                                                                                                              |
| Jtitle           | 共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.34 (1989. ) ,p.89- 89                                                                                                                      |
| JaLC DOI         |                                                                                                                                                                                                                   |
| Abstract         |                                                                                                                                                                                                                   |
| Notes            | 抄録                                                                                                                                                                                                                |
| Genre            | Technical Report                                                                                                                                                                                                  |
| URL              | <a href="https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000034-0089">https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000034-0089</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.

**Effects of TRH and DN-1417 on High Potassium-Evoked Acetylcholine Release from Rat Basal Forebrain Slices Determined Directly by Radioimmunoassay**

**Takeshi SUZUKI, Kazuko FUJIMOTO, Hisayo OOHATA  
and Koichiro KAWASHIMA**

鈴木岳之, 藤本和子, 大畑尚代, 川島紘一郎

1. High potassium (50 mM) -evoked acetylcholine (ACh) release from rat basal forebrain slices under conditions without an exogenous choline supply was determined using a radioimmunoassay for ACh.
2. A consistent amount of ACh release was observed at each repetitive stimulation and ACh content in brain slices was not altered by potassium stimulations. These results indicate the existence of a large intracellular releasable ACh store, which is independent of new synthesis from exogenous choline.
3. Atropine, even at a concentration of  $10^{-6}$  M, did not affect the potassium-evoked ACh release. Thus, modulation of ACh release by the muscarinic autoreceptor was not revealed under the conditions employed.
4. Thyrotropin-releasing hormone (TRH,  $10^{-4}$  M) caused a slight and statistically insignificant increase in potassium-evoked ACh release. DN-1417, a TRH analogue, at a concentration of  $10^{-4}$  M significantly increased potassium-evoked ACh release. These findings indicate that DN-1417 is able to enhance ACh output independently of ACh synthesis from exogenous choline.

---

\* 本報告は *Gen. Pharmacol.*, **20** (2), 239—242 (1989) に発表.