

**A new type of orally active vanadyl-poly(γ -glutamic acid) complex
for treating type 1 diabetic mice**

Subarna Karmaker*, Tapan K. Saha, Yutaka Yoshikawa, Hiroyuki Yasui, and Hiromu Sakurai
(Department of Analytical and Bioinorganic Chemistry, Kyoto Pharmaceutical University)

Structure of a newly prepared vanadyl-poly(γ -glutamic acid) complex, VO- γ -PGA, was characterized to have VO(O₄) coordination modes in solution and solid state and examined whether this complex has hypoglycemic activity in streptozotocin (STZ)-induced type 1 diabetic mice (STZ-mice) or not.

VO- γ -PGA complex improved the hyperglycemia when it was given orally at doses of 5-10 mg V/kg body mass for 16 days. Then, we examined the effects of long term VO- γ -PGA treatment in the STZ-mice, and found that the complex shows excellent hypoglycemic effect on oral administration at the dose of 10 mg V/kg body mass for 28 days. The improvement in diabetes was supported by the oral glucose tolerance test (OGTT), HbA_{1c} levels, and serum parameters.

The present results confirm that VO- γ -PGA complex is a promising orally active insulin-mimetic agent to treat type 1 diabetic animals.