



# HOKKAIDO UNIVERSITY

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Hokkaido University granted the degree of Master of Veterinary Medicine to the following 13 graduates of the Graduate School of Veterinary Medicine on 25 March, 1976.

The authors' summaries of their theses are as follows :

**PURIFICATION AND CHARACTERIZATION OF PORCINE  
ERYTHROCYTE ADENYLATE KINASE (ATP:AMP  
PHOSPHOTRANSFERASE, EC 2. 7. 4. 3)**

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Porcine erythrocyte adenylate kinase existed in three components in starch gel electrophoresis. All components, however, migrated from origin to anode, and the genetic isozyme pattern could not be observed in this experimental scale of 25 specimens differing from the electrophoretic variants observed in human erythrocyte adenylate kinase (FILDES & HARRIS, 1966).

The enzyme was purified 12,000-fold from porcine erythrocyte with a final yield of 0.57 mg per 1,200 ml of erythrocyte by acid treatment and by ion exchange chromatographies. The enzyme activity was estimated to be 900  $\mu$  moles ADP produced per minute per mg of protein.

The enzyme showed a single band with a molecular weight of 22,000 in SDS gel electrophoresis. The enzyme was homogeneous in disc electrophoresis, however in starch gel electrophoresis it consisted of two components, the strongest intense of which migrated slowly toward the anode. The faster moving components stained poorly.

The enzyme demonstrated remarkable instability in a low ionic environment, while it showed a similarity to the porcine skeletal muscle enzyme in kinetic parameters and in antigenicity.