



Title	STUDIES ON SEPARATION OF GLYCOLIPID ANTIGENS AND MEASUREMENT OF ANTIGEN SYNTHETIC ENZYMES FROM LYMPHOID CELL LINES DERIVED FROM DIFFERENT P BLOOD GROUP PHENOTYPE PERSONS
Author(s)	MOMOTA, Kenji
Citation	Japanese Journal of Veterinary Research, 30(1-2), 32-32
Issue Date	1982-06-30
Doc URL	http://hdl.handle.net/2115/2254
Type	bulletin (article)
File Information	KJ00002374047.pdf



[Instructions for use](#)

STUDIES ON SEPARATION OF GLYCOLIPID ANTIGENS AND
MEASUREMENT OF ANTIGEN SYNTHETIC ENZYMES
FROM LYMPHOID CELL LINES DERIVED FROM
DIFFERENT P BLOOD GROUP
PHENOTYPE PERSONS

Kenji MOMOTA

Department of Biochemistry
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan

Blood group P antigen (globoside, GalNAc (β 1, 3) Gal (α 1, 4) Gal (1, 4) Glc-Cer) and P^k antigen (CTH, Gal (α 1, 4) Gal (β 1, 4) Glc-Cer) are major glycolipid antigens in the human P blood group system. P^k phenotype persons do not express P antigen on the erythrocyte membrane, while p phenotype persons express neither P^k antigen nor P antigen. We examined the cause of the above expressed genetic phenomena by investigating the deficiency of the glycolipid antigen synthetic enzymes.

The enzyme preparations were obtained from lymphoid cell lines of different P blood group phenotypes established by *in vitro* transformation with Epstein-Barr virus. The glycolipid pattern of these obtained lymphoid cell lines was examined. The result shows that P^k cells lack globoside while p cells lack both globoside and CTH. These results are favorably comparable with those reported previously for the antigens on the erythrocyte membrane.

Globoside-Synthetic enzyme was determined by using CTH and UDP-[¹⁴C] GalNAc as substrates. Globoside-Synthetic enzyme could not be detected in all of the phenotype cell lines, because a large quantity of [¹⁴C]-GalNAc was transferred into the endogeneous protein containing the enzyme preparations from UDP-[¹⁴C] GalNAc.

CTH-Synthetic enzyme was determined by using Lactosyl ceramide and UDP-[³H] Gal as substrates. CTH synthesis was detected in both normal and P^k cells but not in p cell. We, therefore, concluded that p cell lacks both CTH and globoside due to the deficiency of CTH synthetic enzyme.