

**The Diego Factor in Japanese**

It is already known that the study of blood groups and types and their distribution and heredity are of great significance in anthropology.

Since the Diego blood group was originally reported<sup>1</sup> in 1954 the investigation of this blood group and its incidence in different races of various countries have been reported by several authors. At present, the Diego factor has been found in the blood of South American Indians, and mixed bloods in Venezuela, Brazil, North American Indians, and Chinese and Japanese residents in Canada and Venezuela. No Diego factor was discovered in Caucasians and Negroes; therefore it seems that the Diego factor is an anthropological characteristic of Indians and Mongoloids.

The first investigation of the Diego factor in Japanese in Japan was carried out by Furuhashi, Yokoyama and Kuniyuki<sup>2</sup> in Tokyo, and they found 2 (2.3 per cent) Diego positive (Di(a+)) bloods in 88 samples. The anti-Diego serum was kindly supplied by Dr. Philip Levine, Ortho Research Foundation, Raritan, New Jersey, for this investigation. The serum showed activity and clear-cut results by indirect Coombs test.

We received another antiserum through the courtesy of Dr. Miguel Layrisse, Banco de Sangre, Caracas, Venezuela, for the second study. This time we used serum to test the blood of people in Tokyo and in Kumamoto located in the southern part of Japan. Tests were made by the indirect Coombs technique and the results were 6 (4.1 per cent) of Di(a+) bloods in 146 random samples in Tokyo and 17 (7.5 per cent) in 227 unrelated people in Kumamoto.

Masaki and Furukawa<sup>3</sup> reported the frequency of the Diego factor as 16 (3.2 per cent) in 500 Japanese living in the Gumma area. They used anti-Diego serum obtained from Dr. James F. Mohn, Buffalo University, Buffalo, New York.

The incidence of the Diego factor in Japanese from our investigation is approximately 3-4 per cent in Tokyo and is a little lower than the 8 in 65 cases (12.3 per cent) in Venezuela reported by Layrisse and Arends<sup>4</sup> and the 6 in 77 cases (7.8 per cent) in Canada reported by Lewis, Ayukawa, Chown and Levine<sup>5</sup>. However, the incidence of the Diego factor was found to be about 7.5 per cent in the southern part of Japan. Moreover, Dr. Paul J. Schmidt (personal communication), Blood Bank, National Institutes of Health, United States, found an incidence of nearly 10 per cent of the Diego factor in samples from Fukuoka located on the same island as Kumamoto. One of us (N. U., personal communication) examined samples in Kumamoto more recently and found 8.7 per cent Diego-positive bloods.

Table 1. FREQUENCY OF DIEGO FACTOR IN JAPANESE

Authors	Tested No.	Diego factor	
		Pos. (%)	Neg. (%)
Layrisse and Arends (1956)	65	8 (12.3)	67 (87.7)
Lewis, Ayukawa, Chown and Levine (1956)	77	6 (7.8)	71 (92.2)
Furuhashi, Yokoyama and Kuniyuki (1957)	88	2 (2.3)	86 (97.7)
Masaki and Furukawa (1959)	500	16 (3.2)	484 (96.8)
Yokoyama, Murakata and Ueno (1960)	146* 227†	6 (4.1) 17 (7.5)	50 (95.9) 210 (92.5)

\* Tested in Tokyo. † Tested in Kumamoto. The number includes 5 (6.7 per cent) Diego positive of 74 random samples previously cited by Layrisse, M., *Amer. J. Phys. Anthropol.*, 16(2), 178 (1958).

From our present results, there appears to be a lower incidence of the Diego factor in northern Japan, with the incidence gradually increasing and reaching the highest incidence in Japanese in the southern part of Japan. This frequency suggests that the Diego factor may be an Asiatic characteristic as are factors for group B, Rh<sub>0</sub>, kk and Gm<sup>a</sup>.

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<sup>1</sup> Levine, P., Koch, E. A., McGeel, R., and Hill, G. H., *Amer. J. Clin. Path.*, 24, 292 (1954).

<sup>2</sup> Furuhashi, T., Yokoyama, M., and Kuniyuki, M., *Proc. Jap. Acad.*, 33(4), 228 (1957).

<sup>3</sup> Masaki, S., and Furukawa, K., *Jap. J. Legal Med.*, 13(3), 359 (1959).

<sup>4</sup> Layrisse, M., and Arends, T., *Nature*, 177, 1083 (1956).

<sup>5</sup> Lewis, M., Ayukawa, H., Chown, B., and Levine, P., *Nature*, 177, 1984 (1956).

<sup>6</sup> Yokoyama, M., and Ueno, N., *Juntendo Med. J.*, 6(2), 99 (1960).

**RADIOBIOLOGY**

**Alkoxyglycerols as Growth-stimulating Substances**

IN connexion with experiments on irradiated rats, it has been shown that the alkoxyglycerols or their esters prohibit to a certain extent the decrease both of megakaryocytes and of nucleated cells in the bone marrow, a decrease which usually occurs after irradiation<sup>1</sup>. When radiomimetic substances (for example, leukeran and myleran) are given to rats, a diminution of the above types of cells is equally observed. This diminution is also partly prevented by alkoxyglycerols.

It has now been found that the alkoxyglycerols have an effect not only on the bone marrow, but they also influence the growth of the rats. In general, normal, non-irradiated rats increase in weight more rapidly than irradiated rats. However, when irradiated rats were prophylactically treated with alkoxyglycerols the increase in weight was higher than for the irradiated control group, which received no treatment. The normal non-irradiated group showed an increase of 1.7 gm. a day per animal, the prophylactically treated group 1.3 gm. and the control group 1.1 gm.

When the alkoxyglycerols were found to promote the growth of rats, it seemed desirable to try their effect on *Lactobacilli*, which have been used as test organisms for many growth-stimulating substances. Twelve strains of *Lactobacilli* were tested. Pure synthetic media were used as substrates. The growth was determined turbidimetrically. The best results were found for *Lactobacillus lactis* (Fig. 1). The cultures were transferred to two sets of tubes, one control set with synthetic substrates and one with substrates to which had been added selachyl alcohol (an unsaturated alkoxyglycerol). A very striking effect is observed at a concentration of 20γ per ml. of alkoxyglycerols, but even at a concentration of 2γ per ml. a clearly observable effect is obtained. (I am indebted to Dr. Lennart Enebo for the performance of these experiments.)