Zusammenfassung. Es wird gezeigt, dass im Cytotoxizitätstest mit Mäuselymphocyten der cytotoxische Titer durch Neuraminidasevorbehandlung stark gesteigert werden kann, falls Kaninchenserum als Komplement verwendet wird. Durch Trypsin- oder Ficin-Vorbehandlung wird nur eine schwache Steigerung erzielt. Im Gegensatz zum Cytotoxizitätstest mit unbehandelten Lymphozyten wird der stärkste Titeranstieg bei der «one step»-Methode beobachtet. Um die spezifische Titererhöhung mit Kaninchen-Komplement zu erklären, wird ein «enhancing factor» mit einer Spezifität gegen Neuraminidase behandelte antikörperbeladene Lymphocyten postuliert.

H.-D. ADOLPHS

Abteilung für Medizinische Mikrobiologie der Medizinischen Fakultät, Technische Hochschule, Goethestrasse 27–29, D–51 Aachen (Germany), 5 November 1971.

Anti-Lymphocyte Serum and Suppression of Interferon Production

Although the effect of heterologous anti-lymphocyte serum on interferon production has been studied by several investigators, there is no general agreement regarding the nature of this effect. HIRSCH et al.[1] reported no significant depression in interferon levels of mice given 3 injections of rabbit antimouse lymphocyte serum before stimulation with vaccinia virus. BORDEN et al.[2] obtained a slight reduction (2-fold) in interferon titers of mice treated with anti-lymphocite serum. In contrast to these findings, a study by BARTH et al.[3] reported a significant reduction in interferon titers of mice given 3 injections of burro antimouse lymphocyte serum. The present study reports additional data on suppression of interferon production by antilymphocyte serum.

Methods. Anti-mouse lymphocyte serum (ALS) was produced by immunizing rabbits with two i.p. injections of mouse thymocytes, according to a modified procedure of LEVEY and MEDAWAR[4]. Rabbits were bled 1 week after the last injection. Sera were pooled, inactivated at 56 °C for 20 min, and adsorbed with 20% mouse red blood cells for 1 h at 37 °C and overnight at 4 °C. Agglutination tests with mouse red blood cells were negative after adsorption. Pooled serum was tested for antibody to mouse lymphocytes by the cytotoxicity test: incubation of ALS with mouse spleen cells for 30 min at 37 °C resulted in 32% cell mortality, compared to 6% mortality in normal rabbit serum (NRS) controls. Mice were injected i.p. with 1 ml of either ALS or NRS, followed 24 h later by 1 ml Newcastle disease virus (NDV) (640 hemagglutinating units). Animals were bled 8, 16 and 25 h after injection of NDV. Sera were collected and assayed for interferon in L-929 cells by inhibition of cytopathogenic effect, using vesicular stomatitis virus as challenge[5].

Results. Treatment of mice with ALS produced a 4-fold reduction in the amount of interferon produced, when compared to NRS-treated controls. Suppression could be demonstrated 8 h after stimulation with NDV. After 24 h, interferon could not be detected in ALS – treated mice (Table).

These results are in general agreement with those of BARTH et al.[3] who reported a 4- to 5-fold reduction in the amount of interferon produced in ALS-treated mice.

Depression of interferon response in ALS-treated mice constitutes indirect evidence for involvement of lymphoid cells in interferon production.

Résumé. L'administration de 1 ml ALS, 24 h avant l'introduction de l'interféron avec le virus de la maladie de Newcastle, provoqua une réduction au quart du taux de l'interféron.

LUCY TREAGAN[6]

Department of Biology, University of San Francisco, San Francisco (California 94117, USA), 27 November 1971.

Effect of treatment with ALS or NRS on induction of interferon in mice by NDV

Treatment	Interferon titer (units/3 ml) h after induction		
	8	16	24
NRS	1500	550	280
ALS	390	200	0

[1] M. S. HIRSCH, A. J. NAHMIAS, F. A. MURPHY and J. H. KRAMER, J. exp. Med. *128*, 121 (1968).
[2] E. BORDEN, F. MURPHY and G. GARY JR., Proc. Soc. exp. Biol. Med. *134*, 865 (1970).
[3] R. F. BARTH, R. M. FRIEDMAN and R. A. MALMGREN, Lancet *2*, 723 (1969).
[4] R. H. LEVEY and P. B. MEDAWAR, Ann. N.Y. Acad. Sci. *129*, 164 (1966).
[5] L. TREAGAN and A. FURST, Res. Commun. Chem. Path. Pharmac. *1*, 395 (1970).
[6] Aided by a grant from the Research Committee of the University of San Francisco.

Hemoglobin in Immature Erythrocyte Mitochondrion-Like Organelles

An increase in number of mitochondria occurs in reticulocytes after nuclear extrusion by erythroblasts in the peripheral blood of rabbit-embryos[1]. Mitochondrion-like organelles (MLO) in cells fixed in hypotonic medium and stained by phosphotungstic acid were shown from pinocytotic vesicle formation onwards[2]. Reticulocyte MLO are formed concomitantly with the transformation of iron containing material, for heme biosynthesis. Besides their higher number in relation to the later erythroblasts, reticulocyte MLO, constituted predominantly by longitudinal cristae, are highly electron dense, suggesting a high protein content in these organelles[2].