

ACTION OF ACTINOMYCIN D, BROMODEOXYURIDINE
AND FLUORODEOXYURIDINE ON THE MULTIPLICATION
OF THE UKUNIEMI ARBOVIRUS IN CELL CULTURES

J. Žemla, M. Grešíková

Institute of Virology, Slovak Academy of Sciences, Bratislava, Czechoslovakia

Received August 1, 1969

The nature of the nucleic acid of Uukuniemi virus, reported from Finland (1), Bohemia (2) and Slovakia (3), was studied. The virus causes a fatal infection in intracerebrally (ic) inoculated suckling mice and multiplies in chick embryo cell (CEC) cultures producing a partial cytopathic effect and an interference with Sindbis virus.

Attempts to isolate a biologically active nucleic acid from virus-infected mouse brains by various phenol methods (4) were unsuccessful so far (A. Vachálková, personal communication).

We investigated the effects of actinomycin D, 5-bromo-2'-deoxyuridine (BUDR) and 5-fluoro-2'-deoxyuridine (FUDR) on Uukuniemi virus reproduction in CEC cultures. About 100 LD₅₀ of Uukuniemi virus (isolated in Slovakia — 3) per cell were inoculated into 24 hr old CEC cultures and, immediately after virus adsorption, actinomycin D (2 µg/ml), BUDR (50 µg/ml) or FUDR (0.25 µg/ml) were added. The virus growth was followed for 5 days and the total infective virus from duplicate tubes was titrated ic in suckling mice. The results of 3 experiments performed

Hours p. i.	Virus titres (log LD ₅₀ /0.01 ml)							
	Control		Actinomycin D		BUDR		FUDR	
	I	II	I	II	I	II	I	II
0*	≥4.5	5.0	4.0	5.0	≥4.5	4.8	≥4.5	4.9
24	5.6	6.5	5.6	6.2	5.6	6.9	≥6.5	6.1
72	7.4	8.5	6.0	8.5	6.0	8.4	6.7	8.5
120		8.2		8.5		8.2		8.5

* Residual virus after washing.

(those of exp. I and II are given in the Table) showed that neither actinomycin D, nor BUDR, nor FUDR affected the normal course of virus multiplication in CEC cultures. This may be considered as indirect evidence that the nucleic acid of Uukuniemi virus is of the single-stranded RNA type.

References

- Oker-Blom, N., Salminen, A., Brummer-Korvenkontio, M., Kääriäinen, L., and Weckström, P., *Ann. Med. exp. Fenn.* **42** : 109, 1964.
- Kolman, J. M., Málková, D., and Smetana, A., *Acta virol.* **10** : 171, 1966.
- Kožuch, O., Grešíková, M., and Nosek, J., *Acta virol.* **12** : 475, 1968.
- Gierer, A., and Schramm, G., *Z. Naturforsch.* **11b** : 138, 1956.