EFFECT OF DISTAMYCIN A ON INTERFERON PRODUCTION INDUCED IN VITRO BY NEWCASTLE DISEASE VIRUS

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Received February 12, 1980; revised August 27, 1980

The interferon system plays a fundamental role in preventing the progress of viral infections and in modulating the defence mechanism of the host (*1*). Distamycin A (DA) is an antiviral antibiotic, active against DNA viruses and at high doses also against retroviruses acting on DNA- and RNA-dependent DNA polymerase (*2, 3*).

We investigated if DA could interfere in vitro with the resistance to superinfecting virus and the virus-induced interferon production.

Clone CCL-1 mouse fibroblasts were incubated overnight in the presence of Newcastle disease virus (NDV_F) at a multiplicity of 100 $TCID_{50}$ per cell without or with various concentrations of DA (Farmitalia, Milian, Italy). The supernatants were collected and the cells, after three washings, challenged with Teyler GD-7 virus at a multiplicity of 20 $TCID_{50}$ per cell. The acquired antiviral resistance was evaluated after 20 hr, from the reduction in the haemagglutinating titre of the virus compared to the controls. Even at the highest concentration tested (100 μl/ml) DA did not reduce the resistance of mouse fibroblasts to superinfecting virus.

The technique of Oie *et al.* (*4*) was employed to determine the interferon concentration in the supernantant fluid, using CCL-1 cells and GD-7 challenge virus. The mean ± SD of interferon titre (log_2 units/ml) of three successive experiments was caculated and the statistical analysis performed by Student's test. The interferon titre in the presence of 25 and 50 μg/ml of DA (11.33 ± ± 0.57) did not differ from the controls (11.66 ± 0.57). A slight (10.00 ± 0.99), but significant ($P < 0.05$), depressing effect was present with 100 μg/ml of DA.

Because the drug inhibits viral replication between 1 and 25 μg/ml (3,5), its antiviral activity does not interfere with the resistance to a superinfecting virus and interferon production.

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