

EXPERIMENTAL INFECTION OF PANCREATIC ORGAN CULTURES
FROM SUCKLING WHITE MICE WITH TICK-BORNE ENCEPHALITIS
AND SINDBIS VIRUSES

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The relationship of viruses to pancreatic lesions has been extensively investigated in the last years (1). Experimental diabetes occurs in mice infected with certain viruses of family *Picornaviridae* (2, 3, 4, 9, 10) and family *Rheoviridae* (8). Concerning togaviruses, tick-borne encephalitis (TBE) virus was demonstrated in the Langerhans islands by immunofluorescence (1) and Venezuelan encephalitis virus was shown to replicate in pancreatic β -cells of hamsters (8).

In our experiments, pancreatic fragments from suckling white mice kept in BEM containing 10% fetal calf serum were infected with TBE and Sindbis viruses. Organ cultures were inoculated with 7.5 log LD₅₀ of the Skalica strain (5) of TBE in 0.01 ml. After 2 hr adsorption, the explants were refed and incubated for 10 days. Explants were removed on days 1, 2, 3, 4, 7 and 10 post infection (p.i.) for titration. Alternatively, explants were infected with 8 log LD₅₀ of Sindbis virus in 0.01 ml inoculum. The suspensions prepared from the explanted fragments were inoculated into 2–3 days old suckling mice by intracerebral route.

The highest titre of TBE virus in explants (5.8 log LD₅₀/0.01 ml) was found on 3rd day p.i.; later on it was continuously detected until day 10 p.i. In contrast, Sindbis virus did not multiply in the pancreatic fragments. The highest titre found by day 1 was 2 log LD₅₀/0.01 ml, while the stock virus titre after thermal inactivation was 6 log LD₅₀/0.01 ml. If the virus was not washed off after adsorption, the titre by day 2 was 7.8 log LD₅₀/0.01 ml but it fell sharply to reach undetectable levels by day 10 p.i.

The presented results showed that fragments of pancreas from suckling mice can be used to study the interaction of togaviruses with the pancreatic tissue.

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