Activity of feline interferon-omega after ocular or oral administration in cats as indicated by Mx protein expression in conjunctival and white blood cells

Summary / Zusammenfassung
Objective: To assess the biological response to recombinant feline interferon-omega (rFeIFN-w) following ocular or oral administration in cats via estimation of Mx protein expression in conjunctival cells (CCs) and WBCs.
Animals—10 specific pathogen free cats.
Procedure: In multiple single-dose drug experiments, each cat received various concentrations of rFeIFN-w administered topically into both eyes (50 to 10,000 U/eye) and orally (200 to 20,000 units). The same cats received saline (0.9% NaCl) solution topically and orally as control treatments. The CCs and WBCs were collected prior to treatment (day 0), on day 1, and every third or seventh day thereafter until samples yielded negative results for Mx protein. Samples were examined for Mx protein expression via immunohistochemistry and immunoblotting involving murine anti-Mx protein monoclonal antibody M143.
Results: After topical application of 10,000 units of rFeIFN-w/eye, CCs stained for Mx protein for a minimum of 7 days, whereas WBCs were Mx protein-positive for a minimum of 31 days. After topical application of lower concentrations, CCs did not express Mx protein, in contrast to WBCs, which stained for Mx protein at 1,000 units for at least 1 day. Following oral administration, Mx protein was expressed in WBCs at rFeIFN-w concentrations as low as 200 units, whereas CCs did not stain for Mx protein at any concentration.
Conclusions and Clinical Relevance: Results indicate that Mx protein expression (a marker of the biological response to rFeIFN-w) in CCs and WBCs of rFeIFN-w–treated cats depends on the dose of rFeIFN-w, site of administration, and cell type.

Publications / Publikationen
"Activity of feline interferon-omega after ocular or oral administration in cats as indicated by Mx protein expression in conjunctival and white blood cells"
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