B-20: The presence and strength of acid phosphatase in cattle filarial nematodes *Onchocerca gutturosa and Onchocerca gibsoni*

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Histochemical staining for acid phosphatase in *Onchocerca gutturosa* and *O. gibsoni* differentiation and to establish the parasite biochemical profiles.

Acid phosphatase activity in sections was domonstrated with the azo dye technique using Napthol AS-BI phosphate as substrate, at a pH of 4.94. The incubation period was 1 h at 37°C. Controls without the substrate or with 10 mM sodium fluoride were run simultaneously.

The most noticeable difference between the *Onchocerca* species was seen in the *hypodermal* wall; *O.gibsoni* showing very strong activity whilst O.gutturosa revealing no reaction. Male *Onchocercal* worms had a characteristic presence of strong acid phosphatase activity in the outer cuticle region, with *O. gutturosa* stronger than *O. gibsoni.* The cuticular walls of the female worms were negative. Another major difference is the staining of the alimentary canal. The luminal surface of the gut in *O. gibsoni* was moderately active whereas in *O. gutturosa,* activity could not be detected.

The developing forms of microfilariae varied in stain positivity with differences typical for different stages of development of the parasite. Essentially the pattern was similar in both parasites; strongest staining was seen in morulae and also in late 'pretzel' forms. The staining of the uterine wall in Onchocercal species correlated with staining pattern of the developing forms found in that segment.

These findings emphasize the potential of enzyme histochemistry for the assessment of parasite biochemical profiles and as an adjunct to the more bench oriented approaches used in the identification of related filarial species.