

Abstract

Detection of *Stephanofilaria* (Nematoda: Filariidae) in Buffalo Fly Lesions [†]

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Abstract: *Haematobia irritans exigua*, commonly known as buffalo fly (BF), causes economic losses of about AUD \$100 million per annum to the Australian cattle industry in terms of decreased production and costs of control. Lesions associated with BF infestation range from raised, dry, alopecic, hyperkeratotic or scab encrusted to severe hemorrhagic areas of ulceration which represent a major animal welfare concern. BF transmits a filarial nematode, *Stephanofilaria sp.*, which has been speculatively associated with BF lesion development. The existing literature indicates that the sensitivity of currently used diagnostic techniques to detect *Stephanofilaria* in skin lesions is low and that there is currently no sequence for *Stephanofilaria* available on GenBank. Our objective is to develop a PCR method to detect *Stephanofilaria* in BF lesions. Skin biopsies were collected from 10 freshly slaughtered cattle hides having obvious BF eye lesions. Samples were collected from the center and the edge of the BF lesion as well as from adjacent normal tissue. Each skin punch was cut into 5–6 slices and immersed in normal saline before incubation overnight at 22°C. Eight nematodes were recovered from the saline by microscopic examination and preserved in ethanol. Nematode DNA will be extracted using conventional extraction methods. Specific primers will be used to amplify the ITS regions of rDNA and *coxI* region of the mtDNA and the amplified DNA will be sequenced. Primers will be designed from these regions to detect the presence of *Stephanofilaria* and used in PCR studies to clarify the etiology and epidemiology of BF lesions.

Keywords: *Stephanofilaria*; buffalo fly lesion; etiology; epidemiology; skin biopsies

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