

SIZE AND CHARGE ANTIGENS OF *DIROFILARIA IMMITIS* ADULT WORM FOR IgG-ELISA DIAGNOSIS OF BANCROFTIAN FILARIASIS

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Abstract. We used *Dirofilaria immitis* adult worm antigens to develop an IgG-ELISA, then used this to evaluate 30 serum samples of patients with proven *Wuchereria bancrofti* infection, 131 samples of patients with other parasitic diseases and 30 serum samples of healthy controls. The *D. immitis* antigen was prepared using two methods: Sephacryl S-200 chromatography and iso-electric focusing with a Rotofor cell. This was done to determine the best method for diagnosing *W. bancrofti* filariasis. Before fractionation, crude male *D. immitis* antigen yielded 100% sensitivity and 60.8% specificity, and crude female antigen yielded 80% sensitivity and 52.8% specificity, respectively, to detect *W. bancrofti* infection. After gel filtration chromatography, the male *D. immitis* antigen, called MP1, yielded 100% sensitivity and 95% specificity, and female *D. immitis* antigen, called FmP1, gave 100% sensitivity and 59.6% specificity, to detect *W. bancrofti* infection. Using iso-electric-focusing, both male and female crude *D. immitis* antigens (Iso-MF and Iso-FmF, respectively) were separated mechanically into 20 iso-fractions (F1-F20) each. By preliminary screening with ELISA, using pooled positive and negative sera, Iso-MF10, pH 7.5, and Iso-FmF14, pH 7.6, were selected. Iso-MF10 gave 100% sensitivity and 96.9% specificity, and Iso-FmF14 gave 100% sensitivity and 64% specificity. In the study, Og4C3-ELISA, for the detection of circulating filarial antigen, was also used to analyze these serum samples, it gave 87.6% sensitivity and 99.4% specificity to detect *W. bancrofti* infection. Male *D. immitis* antigens, MP1 and Iso-MF10, gave high sensitivity and specificity, and appear to be the best choices for use in an ELISA to diagnose bancroftian filariasis.

Key words: *Dirofilaria* antigen, column chromatography, iso-electric focusing, IgG-ELISA, Og4C3-ELISA

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