

# Evaluation of an indirect hemagglutination method (IHA) with larval antigens for the serodiagnosis of *Oestrus ovis* infestations in goats

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Received: 02.01.2023

Accepted: 07.03.2023

## Abstract

*Oestrus ovis* (sheep nasal bot-fly) is one of the important zoonotic parasites of small ruminants. Human ophthalmic-nasopharyngeal myiasis caused by *O. ovis* larvae have been reported in Iran and other countries. In this study, excretory-secretory (ES) and somatic (S) antigens of *O. ovis* larvae were evaluated for serodiagnosis of the infestation in goats by indirect haemagglutination (IHA). After tagging and blood sampling of goats in the slaughterhouse, the third and second larval stages of *O. ovis* (L2 and L3) were collected from their cut horns. For the preparation of somatic antigens (SL2 and SL3), the larvae were homogenized separately in test tube with a homogenizer, then centrifuged and the supernatant was collected. For the preparation of ES-antigens (ESL2/ESL3), the larvae were separately incubated in RPMI media with antibiotics for 48 hours. With 30 positive sera (from infested goats), 30 negative sera (from kids) and the antigens, the IHA method was evaluated for diagnosis of *O. ovis* infestation in goats. Based on IHA tests performed on ESL2 and SL2 antigens, sensitivity and specificity rates were 91% and 85%, and 82% and 96%, respectively. Based on the IHA results, using SL3 and ESL3 antigens, the sensitivity and specificity were 86% and 100%, and 23% and 92%, respectively. A total of 206 sera samples from goats in Behbahan (Khuzestan) were tested for serodiagnosis of *O. ovis* infestations by IHA using ESL2 and ESL3 antigens. Results of IHA using ESL2 and ESL3 showed seroprevalences of *O. ovis* infestation in the animals at 59.7% and 43.2% respectively. According to the results of this study, IHA with ESL2 and ESL3 antigens can be used with indirect hemagglutination as a rapid, inexpensive detection method, especially in goats for treatment and control, minimizing their economic losses, as well as in humans for reducing myiasis.

**Key words:** *Oestrus ovis*, Goats, Indirect haemagglutination, IHA, Khuzestan

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