DOI : 10.5958/2277-8934.2021.00043.6 *Vol 28 No 3, p 277-282*

EFFECTIVENESS EVALUATION OF RECOMBINANT ANTIGEN rCPI FOR iELISA DETECTION OF CAMEL PARABRONEMIASIS

Yu Wang[1*], Chenchen Feng[1*], Chunxia Liu[2], Jianyun LI[3] and Wenlong Wang[1#]

[1]College of Veterinary Medicine, [2]College of Life Sciences, Inner Mongolia Agricultural University, Hohhot 010018, China Key Laboratory of Clinical Diagnosis and Treatment Technology in Animal Disease, Ministry of Agriculture, P.R. China, Hohhot 010018, China

[3]Inner Mongolia Comprehensive Centre for Disease Control and Prevention, Hohhot 010031, China

ABSTRACT

Parabronemiasis is a serious parasitic disease in ruminants and a major parasitic nematode in camels. There is still no ideal method for diagnosing the disease when the hosts are alive. In order to screen the antigen of *P. skrjabini* for establishing a serological diagnostic method for camel parabronemiasis, in this study, we amplified and cloned the gene encoding cysteine protease inhibitor (*cpi*) of *P. skrjabini* by RT-PCR and constructed the expression plasmid pET-*cpi*, which was then transferred into *Escherichia coli* BL21 (DE3) to obtain the recombinant protein rCPI. The purified recombinant protein was used as the coating antigen to establish an indirect ELISA diagnostic method for parabronemiasis. A total of 140 sera collected from camels in Inner Mongolia were tested. A recombinant *cpi* protein rCPI with a size of 20.2 kDa was obtained, which can specifically bind to IgG in the serum of camels infected with *P. skrjabini*. An iELISA method for the detection of parabronemiasis was established with good specificity. The positive rate of 140 camel sera was 84.3% (118/140), indicating that rCPI iELISA can be used as a serological diagnostic method for camel parabronemiasis.

Key words: Camels, cysteine protease inhibitor, *Parabronema skrjabini*, Parabronemiasis, serological diagnosis