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Expression of recombinant HAO3 from an iranian isolate of Hyalomma anatolicum *anatolicum* as a vaccine candidate in *Pichia pastoris* and evaluation of its antigenicity

Mashallah Mohammadi, Seyyed Mahmoud Ebrahimi, Majid Tebianian, Mehran Dabaghian, Mohammad Hossein Zabeh Jazi and Ali Rezaei Mokarram

Razi Vaccine and Serum Research Institute (RVSRI), Iran

H. a. anatolicum tick is considered as one of the main problem of ruminants' productivity in endemic countries such as parts of Africa, the Middle East and India. The disease is economically important and hence, its control and eradication is a priority. This problem reinforces the need for alternative approach like vaccine to control tick infestations in stead of continuous application of acaricide which led to the natural selection of the acaricide-resistant ticks. Therefore, the present study provided evidence for the construction of transformant containing the chromosomally integrated multi-copy expression cassettes of *HAO3*, its successful and efficient expression in *P. pastoris* yeast and purification of the secreted protein by ultrafiltration (UF) system in a high level yield and purity.

The result of antigenicity assay for the rHAO3 protein pointed well towards its capability for the elicitation of antibody response in immunized rabbits. Interestingly, the results indicated that the expressed HAO3 protein reacted well with mid gut antigen (MGAg) and rBm86 (Gavac) antisera in ELISA and western blot assays making it evident that the epitopes present in expressed protein are well recognized by the antibodies against MGAg and rBm86 proteins. Moreover, the presence of cross-reactive epitopes between rHAO3 protein with its native antigen from mid gut cells was also determined.

Biography

Dr. Mohamadi has completed his MD degree at the age of 26 years from Tehran University, Iran. He is now faculty member of Razi vaccine and serum research institute".