Title: Development of recombinant goatpox virus expressing *Echinococcus granulosus* EG95 vaccine antigen

Authors: Fuxiao Liu, Xiaoxu Fan, Lin Li, Weijie Ren, Xiuju Han, Xiaodong Wu, Zhiliang Wang

PII: S0166-0934(18)30266-0
DOI: https://doi.org/10.1016/j.jviromet.2018.08.002
Reference: VIRMET 13513

To appear in: *Journal of Virological Methods*

Received date: 18-5-2018
Revised date: 1-8-2018
Accepted date: 3-8-2018

Please cite this article as: Liu F, Fan X, Li L, Ren W, Han X, Wu X, Wang Z, Development of recombinant goatpox virus expressing *Echinococcus granulosus* EG95 vaccine antigen, *Journal of Virological Methods* (2018), https://doi.org/10.1016/j.jviromet.2018.08.002

Research paper

Title:

Development of recombinant goatpox virus expressing *Echinococcus granulosus* EG95 vaccine antigen

Author list:

Fuxiao Liu, Xiaoxu Fan, Lin Li, Weijie Ren, Xiuju Han, Xiaodong Wu, Zhiliang Wang*

Author affiliation:

OIE Reference Laboratory for Peste des Petits Ruminants, National Research Center for Exotic Animal Diseases, China Animal Health and Epidemiology Center, No.369 Nanjing Road, Qingdao, Shandong 266032, China

*Corresponding author. Tel.: +86 532 87839188; Fax: +86 532 87839922

E-mail address: wangzhiliang@cahec.cn (Z. Wang).

Highlights

- • Construction of recombinant goatpox virus by TK gene-based homologous recombination
- • Expression of *E. granulosus* EG95 antigen *in vitro* by the recombinant goatpox virus
- • Potential of bivalent vaccine in preventing goatpox disease and cystic hydatidosis

Abstract

Goatpox disease and cystic hydatidosis may be simultaneously endemic in a given area. Their pathogens are goatpox virus (GPV) and *Echinococcus granulosus* (*E. granulosus*), respectively. Both *E. granulosus* EG95 subunit vaccine and live-attenuated GPV AV41 vaccine have been widely used for prevention of both diseases in China. However, it has been rarely reported that a bivalent vaccine is developed to prevent both diseases. The GPV is an ideal vector for developing recombinant multivalent vaccines to deliver immunogenic proteins in animals. In this study, we constructed an EG95 antigen-expressing recombinant GPV by the thymidine kinase gene-based homologous recombination *in vitro*. The recombinant GPV was purified and then proven to be able to express the