Large-scale Purification and Acute Toxicity of Hygromycin B Phosphotransferase

QIN ZHUO, JIAN-HUA PIAO, YUAN TIAN, JIE XU, AND XIAO-GUANG YANG

Institute for Nutrition and Food Safety, Chinese Center for Disease Control and Prevention, Beijing 100050, China

Objective To provide the acute toxicity data of hygromycin B phosphotransferase (HPT) using recombinant protein purified from E. coli. Methods Recombinant HPT protein was expressed and purified from E. coli. To exclude the potential adverse effect of bacteria protein in recombinant HPT protein, bacterial control plasmid was constructed, and bacteria control protein was extracted and prepared as recombinant HPT protein. One hundred mice, randomly assigned to 5 groups, were administrated 10 g/kg, 5 g/kg, or 1 g/kg body weight of HPT or 5 g/kg body weight of bacterial control protein or phosphate-buffered saline (PBS) respectively by oral gavage. Results All animals survived with no significant change in body weight gain throughout the study. Macroscopic necropsy examination on day 15 revealed no gross pathological lesions in any of the animals. The maximum tolerated dose (MTD) of HPT was 10 g/kg body weight in mice and could be regarded as nontoxic. Conclusion HPT protein does not have any safety problems to human health.

Key words: Hygromycin B phosphotransferase; Selectable marker; Acute toxicity; Safety assessment

INTRODUCTION

REFERENCES


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4Correspondence should be addressed to Xiao-Guang YANG, Tel: 86-10-83132798. Fax: 86-1083132808. E-mail: xgyangcdc@vip.sina.com

Biographical note of the first author: Qin ZHUO, female, born in 1969, research associate, majoring in food safety of genetically modified organisms.


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