

畜牧兽医科学

H7N7亚型禽流感病毒血凝素B细胞和Th细胞表位预测及初步鉴定

白靛1, 金宁一2, 成岩1, 石毅1, 鲁会军2, 南文龙2, 田明尧2, 赵翠青2, 张金双2, 关铭1

1吉林大学药学院, 长春130021; 2军事医学科学院11所, 全军基因工程重点实验室, 长春130062

摘要:

摘要 目的 预测H7N7亚型禽流感病毒血凝素(Hemagglutinin,HA)B细胞和Th细胞相关抗原表位,并对所获表位的抗原性进行初步鉴定。方法 根据禽流感流行趋势,从GeneBank下载H7N7禽流感病毒HA氨基酸序列,使用生物信息学方法,对所下载序列进行预测与分析,获得H7N7亚型禽流感病毒血凝素B细胞和Th细胞相关抗原表位。通过H7亚型禽流感病毒阳性血清,初步验证所选表位抗原性。结果 获得了5个H7N7亚型禽流感病毒候选B细胞和Th细胞表位,经过间接ELISA方法分析,其中HA165~178, HA180~193, HA241~255表序列相对保守,与流行的H7N7亚型禽流感病毒HA相应区域具有较好的一致性,同时具有与H7型禽流感病毒阳性血清抗体结合能力,预示了其成为功能表位的可能。结论 所筛选的表位具有成为H7N7亚型禽流感病毒HAB细胞和Th细胞相关抗原表位的可能,为H7N7亚型禽流感表位疫苗的研究奠定基础。

关键词: 禽流感病毒 血凝素 H7N7 抗原表位

Prediction of the B cell/Th cell epitopes on HA of avian influenza virus (H7N7) and preliminary evaluation

Abstract:

Abstract Objective To predict B/Th cell epitopes on Hemagglutinin(HA) of avian influenza virus (H7N7) and evaluate antigenicity of the candidate epitopes.Methods The HA amino acid sequences of AIV(H7N7) which were prevalent recently ,were downloaded from GeneBank. The Th/B cell epitopes were predicted and analyzed by bioinformatics methods.Then ,antigenicity of the candidate epitopes was identified by AIV (H7)positive serum samples.Results Five B/Th cell epitopes containing HA were acquired.HA165~178, HA180~193, HA241~255 epitopes which were analyzed by indirect ELISA method were on a relatively conserved domain,and a deal of AIV(H7N7) contained the sequences.Moreover,the candidate epitopes were showed with a distinct antibody combining reactivity with the H7 HA positive serum,which inferred the predicted epitopes to be functional ones.Conclusion The selected epitopes are able to be functional HA B/Th cell epitopes of AIV(H7N7) .Our study also establishes the foundations for the recognition of AIV (H7N7) functional epitopes and the development of epitope vaccines.

Keywords: Avian influenza virus HA H7N7 Epitope

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通讯作者: 白靛

作者简介:

作者Email: jilinbl@126.com

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