

植物保护

布尼亚病毒科全基因组序列比对分析*

刘雅婷^{1,2,3}, 张文超¹, 李正跃^{2**}, 李成云³, 朱有勇³, 李永忠⁴

- (1. 云南农业大学农学与生物技术学院, 云南 昆明 650201;
- 2. 云南农业大学植物保护学院, 云南 昆明 650201;
- 3. 云南省植物病理重点实验室, 云南 昆明 650201;
- 4. 云南农业大学烟草学院, 云南 昆明 650201)

收稿日期 2007-12-18 修回日期

摘要 布尼亚科病毒 (Bunyaviridae) 是一类医学和农业上的重要病毒。本文从NCBI数据库下载具有完整基因组序列的布尼亚科病毒的5个属20种病毒的序列, 用生物学软件DNAMAN, DNASTAR进行比对分析, 发现布尼亚科病毒属中的植物病毒在核酸序列及蛋白结构上与动物病毒有很大差异: (1) 只有植物病毒的M基因组能编码NSm运动蛋白; (2) 植物病毒和动物病毒在核酸序列和蛋白质序列长度均有差异, 表明该科病毒是进化速度较快的病毒; (3) 植物病毒核酸序列的GC含量低于动物病毒; (4) 通过SMART网络软件进行蛋白质拓扑结构分析发现植物病毒和动物病毒在糖蛋白G_nG_c的结构上存在显著差异; (5) 植物病毒糖蛋白结构较为复杂, 有较多的紊乱区域, 除INSV外, 其他病毒都具有N端信号肽。这将对以后分子生物学检测中引物的设计及病毒的鉴定等方面的研究起到积极的作用。

关键词 [布尼亚病毒科](#) [番茄斑萎病毒属](#) [DNAMAN](#) [DNASTAR](#) [SMART](#) [序列比对](#)

分类号 [Q 939.47](#)

Alignment and Analysis of Complete Genome of Bunyaviridae

LIU Ya-ting^{1,2,3}, ZHANG Wen-chao¹, LI Zheng-yue², LI Cheng-yun³, ZHU You-yong³, LI Yong-zhong⁴

- (1. Faculty of Agricultural and Biotechnology, Yunnan Agricultural University, Kunming 650201, China;
- 2. Faculty of Plant Protection, Yunnan Agricultural University, Kunming 650201, China;
- 3. Phytopathology Laboratory of Yunnan Province, Yunnan Agricultural University, Kunming 650201, China;
- 4. Faculty of Tobacco Science, Yunnan Agricultural University, Kunming 650201, China)

Abstract

The Bunyaviridae family is a group of very serious medical and agricultural viruses. Complete genome sequences of 20 viruses in *Bunyaviridae* loaded from NCBI were analyzed by two biological softwares of DNAMAN and DNASTAR. The results indicated great variability in both nucleic acid sequence and protein structure between plant viruses and animal viruses: (1) only plant viruses could encored NSm in M genome; (2) the length of nucleic acid sequence and protein sequence was different; (3) GC content of nucleic acid of animal viruses was higher than plant viruses of that; (4) protein topology analysis by online software SMART discovered that there was significant difference for the structure of glycoproteins (G_nG_c) between animal-infecting and plant-infecting viruses; (5) usually, protein of plant-infecting virus had more complicated structure, more low compositional complexity and had N-Signal peptides except INSV. The study would be helpful for designing primer to detect viruses in Bunyaviridae.

Key words [Bunyaviridae](#) [Tospovirus](#) [DNAMAN](#) [DNASTAR](#) [SMART](#) [alignment](#)

DOI:

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(673KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)

- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“布尼亚病毒科” 的相关文章](#)

▶ 本文作者相关文章

- [刘雅婷](#)
-
-
-
- [张文超](#)
- [李正跃](#)
- [李成云](#)
- [朱有勇](#)
- [李永忠](#)

