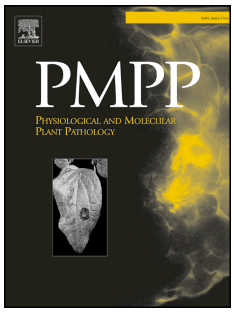
Accepted Manuscript



Bcpks12 gene inactivation substantiates biological functions of sclerotium melanization in *Botrytis cinerea*

Pinkuan Zhu, Qin Li, Chenghua Zhang, Yantao Na, Ling Xu

PII: S0885-5765(16)30182-5

DOI: 10.1016/j.pmpp.2017.03.009

Reference: YPMPP 1249

To appear in: *Physiological and Molecular Plant Pathology*

Received Date: 7 December 2016

Revised Date: 15 March 2017

Accepted Date: 29 March 2017

Please cite this article as: Zhu P, Li Q, Zhang C, Na Y, Xu L, *Bcpks12* gene inactivation substantiates biological functions of sclerotium melanization in *Botrytis cinerea*, *Physiological and Molecular Plant Pathology* (2017), doi: 10.1016/j.pmpp.2017.03.009.

Bcpks12 gene inactivation substantiates biological functions of sclerotium melanization in *Botrytis cinerea*

Pinkuan Zhu[1], Qin Li[1], Chenghua Zhang[2], Yantao Na[1], Ling Xu*[1]

[1] *School of Life Sciences, East China Normal University, 500 Dongchuan Road, 200241 Shanghai China.*

[2] Guangdong Institute of Microbiology, 100 The Middle of Xianlie Street, 510070 Guangzhou, China.

* Corresponding author. Tel: +86 21 54341012; Fax: +86 21 54341006.

E-mail address: lxu@bio.ecnu.edu.cn (L. Xu).

Abstract:

The sclerotium is a highly melanized dormant structure that plays an important role in the survival of many types of fungi. In *Botrytis cinerea*, the polyketide synthase gene, *Bcpks12*, was exclusively required for the melanization of sclerotia that are specifically expressed during sclerotial development. The albino sclerotia of Δ*bcpks12* mutants produced in this study displayed hypersensitivity to external stressors, including extreme temperatures, oxidative chemicals, and desiccation. During the sclerotial development process, the initial sclerotia of the wild-type