

**Title** In vitro inhibition of postharvest pathogens of fruit and control of gray mold of strawberry and green mold of citrus by aureobasidin A

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### Abstract

Aureobasidin A (AbA), an antifungal cyclic depsipeptide antibiotic produced by *Aureobasidium pullulans* R106, has previously been shown to be effective against a wide range of fungi and protozoa. Here we report the inhibitory effects of AbA on spore germination, germ tuber elongation and hyphal growth of five pathogenic fungi including *Penicillium digitatum*, *P. italicum*, *P. expansum*, *Botrytis cinerea* and *Monilinia fructicola*, which are major pathogens causing postharvest diseases of a variety of fruits. AbA inhibited five pathogenic fungi by reducing conidial germination rates, delaying conidial germination initiation, restricting elongation of germ tuber and mycelium, as well as inducing abnormal alternations of morphology of germ tubes and hyphae of these fungi. The sensitivity of these fungi to AbA was pathogen species-dependent. *P. digitatum* was the most sensitive and *M. fructicola* the least. Importantly, AbA at 50  $\mu\text{g/ml}$  was effective in controlling the citrus green mold and in reducing the strawberry gray mold incidence and severity, caused by *P. digitatum* and *B. cinerea*, respectively, after artificial inoculation. AbA and/or its analogs, therefore, hold promise as relatively safe and promising fungicide candidates to control postharvest decays of fruits, because AbA targets the inositol phosphorylceramide (IPC) synthase, an enzyme essential for fungi but absent from mammals.