

# Antifungal activity of proteolytic fraction (P1G10) from (*Vasconcellea cundinamarcensis*) latex inhibit cell growth and cell wall integrity in *Botrytis cinerea*

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The aim of this study was to determine the antifungal activity of the proteolytic fraction P1G10 from *Vasconcellea cundinamarcensis* (ex-*Carica candamarcensis*) against *Botrytis cinerea*, the causative agent of pre- and postharvest damaging disease in fruit and vegetables. The survival of *B. cinerea* at different concentrations of P1G10 showed that 1 mg/mL inhibited 50% of mycelium growth after 72 h incubation. The kinetic of growth inhibition fits the Weibull distribution function, and the data was confirmed by the IC50 survival assay. The study shows that P1G10 inhibits conidia germination and germ tube elongation of *B. cinerea* relative to untreated conidia. Hypersensitivity to cell wall-perturbing agents (Calcofluor white and Congo red) was observed in mycelium cells treated with P1G10. In addition, P1G10 exhibited inhibitory effect on the adhesion of conidia, provoked alterations in membrane integrity and induced production of reactive oxygen species accompanied by cellular damage. Our results highlight the effect of P1G10 on mycelium growth, cell wall alterations, membrane integrity and adhesion. P1G10 emerges as promising antifungal to control disease causing agents in the food agroindustry. © 2018

Antifungal activity

*Botrytis cinerea*

P1G10

Proteolytic enzymes

Vasconcellea cundinamarcencis

latex

plant extract

reactive oxygen metabolite

unclassified drug

Vasconcellea cundinamarcencis extract

antifungal agent

latex

plant extract

antifungal activity

Article

Botrytis cinerea

cell adhesion

cell damage

cell growth

cell survival

conidium

controlled study

fungus cell wall

fungus membrane

gene expression

germination

IC50

mycelial growth

mycelium

nonhuman

plant

Vasconcellea cundinamarcencis

Botrytis

Carica

cell wall

chemistry

drug effect

food control

fruit

fungus spore

growth, development and aging

microbiology

protein degradation

Antifungal Agents

Botrytis

Carica

Cell Wall

Food Microbiology

Fruit

Latex

Mycelium

Plant Extracts

Proteolysis

Spores, Fungal