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# Candidate effector proteins of the anthracnose pathogen *Colletotrichum higginsianum* target plant peroxisomes

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**POSTER SESSION ABSTRACTS**  
**Session CS2 Pathogenesis and symbiosis**  
**CS2M52**

**Monday 4th April**  
**14:00 - 16:00**

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**Candidate effector proteins of the anthracnose pathogen *Colletotrichum higginsianum* target plant peroxisomes**

*Colletotrichum higginsianum* causes anthracnose disease on cruciferous plants, including Arabidopsis. It uses a hemibiotrophic infection strategy, involving formation of a series of specialized cell types. After appressoria puncture host surfaces, bulbous biotrophic hyphae develop inside living host cells, surrounded by a modified host plasma membrane; finally, the fungus switches to destructive necrotrophy, associated with thin filamentous hyphae. The *C. higginsianum* genome encodes 365 putative secreted effectors (ChECs), of which 67 are highly expressed during infection in appressoria and/or biotrophic hyphae. Important clues to effector targets and functions may come from knowing their destination inside plant cells. We therefore transiently expressed these ChECs as N-terminal fusions with GFP in *Nicotiana benthamiana* leaf cells for confocal microscopy. Most proteins (38) were distributed between the plant cytosol and nucleus, similar to GFP alone. However, 11 targeted the plant nucleus and 12 labelled other plant organelles, including 3 specifically targeted to peroxisomes. Two of these have a functional C-terminal peroxisome targeting signal (PTS1) that is required for import into the peroxisome matrix, and one induces plant cell death. Progress towards the functional characterization of these peroxisome-targeted effectors will be presented.

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