

Abstract

Alternaria citri, a postharvest pathogen, produces endopolygalacturonase (endoPG) and causes black rot on citrus fruit. We previously described that an endoPG-disrupted mutant of *Alternaria citri* was significantly reduced in its ability to macerate plant tissue and cause black rot symptoms on citrus. In order to investigate colonization of citrus fruit tissues by *Alternaria citri*, pTEFEGFP carrying a green fluorescent protein (GFP) gene was introduced into wild-type *Alternaria citri* and its endoPG-disrupted mutant (M60). Green fluorescence was observed in spores, germ tubes, appressoria, and infection hyphae of transformants G1 (derived from wild type) and GM4 (derived from M60). Hyphae of G1 but not GM4 vertically penetrated the peel, but the hyphae of both G1 and GM4 spread equally in the juice sac area of citrus fruit. Green fluorescence of *Alternaria citri* transformant EPG7 carrying a GFP gene under control of the endoPG gene promoter of *Alternaria citri* was induced by pectin in the peel during the infection stage, but repressed completely in the juice sac area, likely by carbon catabolite repression by sugars in the juice.