

Abstract

The *PaEXG2* gene, encoding an exo-beta-1,3-glucanase, was isolated from the biocontrol agent *Pichia anomala* strain K. *PaEXG2* has the capacity for coding an acidic protein of 427 amino acids with a predicted molecular weight of 45.7 kDa, a calculated pI of 4.7, and one potential N-glycosylation site. *PaEXG2* was disrupted by the insertion of the *URA3* marker gene, encoding orotidine monophosphate decarboxylase in strain KU1, a uracil auxotroph derived from strain K. Strain KU1 showed inferior biocontrol activity and colonization of wounds on apples, compared to the prototrophic strain. Antagonism and colonization were recovered after the restoration of prototrophy by transformation with the *URA3* gene. Integrative transformation was shown to be mostly ectopic in strain K descendants (only 4% of integration by homologous recombination). *PaEXG2* disruption abolished all detectable extracellular exo-beta-1,3-glucanase activity in vitro and in situ but did not affect biocontrol of *Botrytis cinerea* on wounded apples.