Biochemical and Molecular Biological Studies on Infection (*Ascochyta rabiei*)-Induced Thaumatin-Like Proteins from Chickpea Plants (*Cicer arietinum* L.)*

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Cultivar Specific Expression, PR-Proteins, Thaumatin-Like Protein

A pathogenesis-related protein induced by infection with *Ascochyta rabiei* was purified from intercellular washing fluid of chickpea (*Cicer arietinum* L.) leaves. Amino-terminal sequencing identified the protein, named PR-5a, as a thaumatin-like protein. The isoelectric point was determined with 6.5 and the molecular mass is 16 kDa. Therefore, chickpea PR-5a is the first dicot member of a TLP subgroup containing small TLPs with a molecular weight between 15 and 18 kDa. PR-5a shows no antifungal activity towards *A. rabiei*. Screening of a chickpea cDNA library led to the isolation of a cDNA clone (*p5a-241*) for this protein. A second cDNA clone (*ELR112*) encoding a TLP was isolated using differential hybridisation of cDNA libraries obtained from elicited and water treated cell suspension cultures of chickpea. The deduced protein (PR-5b) has a molecular mass of 22 kDa. PR-5b is postulated to be located in the vacuole due to the presence of a respective N-terminal signal peptide and a carboxy-terminal extension. Southern blot analyses showed that *ELR112* and *p5a-241* represent single copy genes. During fungal infection of chickpea plants expression of both genes proceeds much faster in an *A. rabiei* resistant cultivar than in a susceptible one.