

Cloning and expression of the allergen Cro s 2 profilin from saffron (*Crocus sativus*)

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Abstract

Background: Profilin is a panallergen that is recognized by IgE in allergic patients. Allergy to saffron (*Crocus sativus*) pollen has been described in people exposed to its pollen. Saffron contains a profilin that may cause allergic reactions in atopic subjects. The aim of this study was to describe the cloning, expression and purification of saffron profilin from pollen. **Methods:** Cloning of saffron profilin was performed by polymerase chain reaction using specific primers from saffron pollen RNA. Expression was carried out in *Escherichia coli* BL21 (DE3) using a vector pET-30(+)-TOPO. A recombinant fusion protein was expressed and the recombinant profilin was purified by metal precipitation. Immunological characterization was performed by immunoblotting experiments. **Results:** The 28 kDa recombinant saffron profilin, Cro s 2, as a fusion protein was purified. Immunoblotting tested with the sera of allergic patients showed a specific reaction with the recombinant Cro s 2 band. **Conclusions:** The sequence of Cro s 2 showed a high degree of identity and similarity to other plant profilins and the recombinant saffron profilin, Cro s 2, may be used for target-specific diagnosis and structural analyses and investigation of cross reactivity of Cro s 2 with other plant profilins. © 2009 Japanese Society of Allergology.

Reaxys Database Information

Author keywords

Allergy; Cloning; Cro s 2; Profilin; Recombinant allergen; Saffron

Indexed Keywords

EMTREE drug terms: allergen; hybrid protein; plant RNA; profilin; protein Cro s 2; recombinant profilin; recombinant protein; undclassified drug

EMTREE medical terms: allergy; amino acid sequence; antigen expression; antigen purification; article; controlled study; *Crocus*; *Crocus sativus*; cross reaction; *Escherichia coli*; gene expression; molecular cloning; nonhuman; nucleotide sequence; pollen; precipitation; priority journal; protein expression; protein purification; protein structure; protein targeting

MeSH: Amino Acid Sequence; Antigens, Plant; Cloning, Molecular; *Crocus*; *Escherichia coli*; Molecular Sequence Data; Molecular Weight; Plant Proteins; Pollen; Profilins; Recombinant Proteins; Sequence Alignment

Medline is the source for the MeSH terms of this document.

Molecular Sequence Numbers: GENBANK, [AF129427](#)(referenced), [AF327622](#)(referenced), [AF327623](#)(referenced), [AF377948](#)(referenced), [AF377949](#)(referenced), [AJ007408](#)(referenced), [AY268424](#)(referenced), [DQ740910](#)(referenced), [AY898708](#)(submitted)

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