

Production and characterization of monoclonal antibody against Saffron pollen profilin, Cro s ۲.

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Abstract: BACKGROUND: Allergy to Saffron (*Crocus sativus*) pollen has been described in people involved in processing of saffron flower stamens. Profilins have been identified as a pan-allergen in different plant pollens and foods. This molecule is an actin-binding protein with a molecular weight of ۱۲-۱۶ kDa found in eukaryotic species.

OBJECTIVE: The aim of this study was to generate monoclonal antibody against Cro s ۲ in order to characterize this major allergen of saffron pollen.

METHODS: BALB/c mice were immunized to obtain adequate humoral response. Splenocytes were prepared from the immunized animals, mixed with the P۲-X۱۲-Ag ۸,۶۰۲ myeloma cells and fused by means of PEG ۱۰۰۰. After two weeks of culturing in HAT-containing media, the supernatant from those wells growing hybridomas were screened by ELISA using plates coated with Cro s ۲. Cells from positive wells were cloned at least ۲ times by limiting dilution. Specificity and cross-reactivity of the mAbs were determined by Western blot analysis and sandwich ELISA. Results: Two stable hybridoma clones secreting mAbs against Cro s ۲ were obtained and expanded. The anti-Cro s ۲ mAbs were also found to cross-react with other plant profilins. Isotype of this mAb was identified as micro heavy chain and k light chain.

CONCLUSION: The anti-Cro s ۲ mAb could be a useful tool for characterization and standardization of many pollen and fruit-derived profilins.

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| | isolation & purification |
| Antibody Specificity | |
| Blotting, Western | |
| Cell Line | |
| Crocus | *immunology |
| Enzyme-Linked Immunosorbent Assay | |
| Hybridomas | |
| Immunoblotting | |
| Mice | |
| Pollen | immunology |
| Profilins | *immunology |
| | isolation & purification |