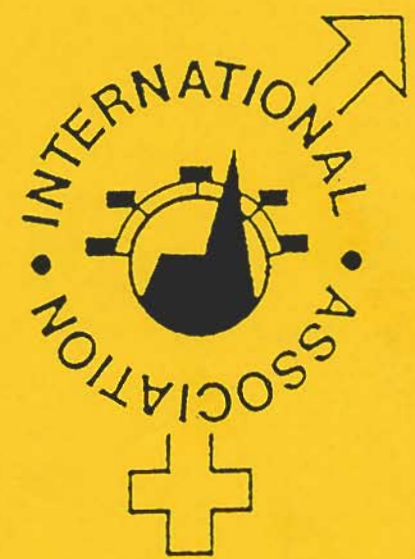
FRONTIERS IN SEXUAL PLANT REPRODUCTION RESEARCH



Edited by: E. Heberle-Bors
M. Hesse
O. Vicente

1994 University of Vienna

IMMUNOLOCALIZATION OF THE OLEA EUROPAEA MAJOR ALLERGENIC PROTEIN IN DIFFERENT OLEACEAE POLLENS

M.C. Fernández, A. Olmedilla, J.D. Alché, B. Carretero and M.I. Rodríguez-García.

Dept. of Biochemistry, Cellular and Molecular Biology of Plant, Estación Experimental del Zaidín (CSIC), Profesor Albareda 1, 18008 Granada, Spain

The allergenicity of olive pollen is well known, especially in Mediterranean areas. The major allergenic protein of olive pollen (ole e I) has been isolated, and monoclonal antibodies (mAb) against different epitopes have been prepared. These antibodies have been used to locate common epitopes by ELISA and immunoblotting in different Oleacea pollens, eg, ash (*Fraxinus excelsior*), lilac (*Syringa vulgaris*), privet (*Ligustrum vulgare*), forsythia (*Forsythia suspensa*).

We used mAb 10H1 to immunolocalize the corresponding allergen in the *Oleacea* species olive, ash, forsythia, lilac and privet. Ash was chosen because its pollen causes many allergic symptoms in North and Central Europe. The pollens of the other three species, although not known to be allergenic agents, contain ole e I epitopes.

Immunolocalization was done with light (LM) and electron microscopy (EM). Pollen was embedded in Lowicryl or Epon and sections were incubated with different concentrations of the 10H1 mAb. A secondary antibody coupled with gold particles was used to localize the protein. These particles were visualized for LM by the silver enhancement technique.

The LM findings showed no immunological reactivity in the pollen wall or in the aperture of any of the species studied. Silver precipitate, when present, always appeared in the cytoplasm. No reaction was observed in olive pollen nuclei or in certain areas of the cytoplasm that were free of silver precipitate. However, in ash, privet and lilac, silver precipitate appeared throughout the cytoplasm, and in the nuclei. Forsythia showed no immunological reactivity. Electron microscopy results confirmed a) the nonreactivity of forsythia proteins, b) the high specificity of the reaction for olive pollen proteins, and c) the unespecific and less abundant reaction for pollen proteins of other species.

We would like to thank Dr. Lahoz for kindly provide the 10H1 antibody. This study was supported by DGYCIT proyect no. PB92-0079-CO3-O3.