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Recombinant allergens for diagnosis and immunotherapy for allergy to venom of social hymenoptera

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Abstract

Brazil has more than 300 species of social wasps (Vespidae Family; Polistinae Subfamily) of which 104 are endemic. Polistinae is represented by the tribes Polistini, Mischocyttarini and Epiponini. *Polybia paulista* species (from Epiponini tribe) is quite abundant in the states of São Paulo and southern Minas Gerais. It has urban habits and is very aggressive, causing many significant accidents of medical perspective. To date, there are no allergenic extracts or components available in our country to diagnosis and treatment of allergic patients to insect venom despite the great number of existing species. We evaluated the immunogenic potential of the recombinant allergens (*Pp*-Hyal-rec and *Pp*-PLA1-rec, expressed in *E. coli* in addition to the *Pp*-Hyal-rec expressed in *Pichia pastoris*) in comparison with the allergenic native proteins for recognition of immunoglobulin E (IgE) in the serum of allergic patients to venom of the endemic social wasp *P. paulista.* Native and the recombinant purified allergens were used for raising polyclonal antibodies in Balb/c mice and tested by Western blotting to verify its specificity and the immune cross reactivity with venoms of other Hymenoptera insects. Our results demonstrated that the recombinant allergens have great potential for use in specific immunotherapy and in diagnostic kits for allergies caused by the venom from this wasp and from other closely related ones. Taking in account that these are the first recombinant venom allergens from a Brazilian endemic species, this comes to fill a shortage in Brazil since today our patients are treated with venom extracts from temperate countries.

Biography

Márcia R. Brochetto Braga, completed her Ph.D. in Genetics and Molecular Biology from the Universidade Estadual de Campinas (UNICAMP) in1989, and her Postdoctoral at East Carolina University School of Medicine (1997). Currently she is an Associate Professor at the Universidade Estadual Paulista (UNESP), Rio Claro, São Paulo, Brazil. She has worked in the areas of Biochemistry, Molecular Biology and Immunology, with emphasis on the themes: gene cloning and expression from Hymenoptera insect venoms (mainly from wasps); biochemical and immunological characterization of recombinant allergens. Since the beginning of her scientific activities has published 33 papers in reputed journals and serving as an editorial board member and reviewer of respected journals. Also, she has worked with over 200 authors and co-authors on papers published in journals and with conference abstracts.