



Osteopontin: A Potential Biomarker for Successful Bee Venom Immunotherapy and a Potential Molecule for Inhibiting IgE-mediated Allergic Responses

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Venom immunotherapy (VIT) is proven to be curative for insect allergy, but the mechanisms and the biomarkers associated with clinical efficacy remain elusive. We report herein the discovery of a leading candidate biomarker, osteopontin (OPN), for VIT. From cDNA microarray and clustering analyses, an increased expression of OPN was found in patients who completed 5—6 years of VIT and discontinued the therapy for 3—6 years as compared with the untreated group. A significantly higher level of serum OPN was found in the completed treatment group as compared with the untreated group. Following VIT, kinetically increased levels of OPN associated with reduced venom specific IgE levels were noted in subjects with large local allergic reactions to venom. These findings together with the fact that OPN is involved in Th1-associated immune response strongly suggest a role of OPN as a functional biomarker for VIT.

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