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Protein profiling and comparative analysis of isolated food born antigens with allergen database

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The immune system is mandatory to fight against infections in host cells. Protective mechanism can also lead to destructive and pathologic outcome such as hypersensitivity. Hypersensitivity reactions are characterized by a variety of symptoms. Anaphylactic hypersensitivity is a sequential process that begins with the stimulation of Th2 cells and production of immunoglobulin IgE in response to exogenous antigen. Food born antigens induce helper T-cells to produce immunoglobulin IgE leading to food allergies. Allergic extracts of common foods such as cow milk, buffalo milk, peanut, egg yolk and egg white and wheat were prepared using different methods. Cow's milk allergy (CMA) is most frequently reported in infant's food problems. Egg allergy has a cumulative prevalence of approximately 2.6% by 2.5 years of age. Wheat is a significant allergen source responsible for food, pollen and respiratory allergy. Peanut allergy can lead to death. Protein concentration was determined using Bradford assay in which buffalo and cow milk curd showed maximum concentration of 29.6 mg/ml and 27.7 mg/ml. Protein extracts of different foods were resolved on 12% SDS-PAGE. In buffalo and cow milk two proteins having a molecular weight of 18.4 kDa and 14 kDa were likely identified as β -lactoglobulin and α -lactoglobulin by comparing with allergen nomenclature WHO/IUIS. Similarly, peanut extract contain Ara h 1 allergen having 64 kDa molecular weight. Egg white contains oval-albumin, having 43 kDa and yolk contains α -levitin and YGP42 with 70-80 kDa and 35-40 kDa molecular weights. Wheat extract contains water soluble gliadins such as α , β , γ , ω components and alcohol soluble glutenins.

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