w232 nSal k 1
nSal k 1 from Saltwort (Salsola kali)

Clinical Utility
As a major allergen for patients sensitized to pollen of Salsola kali but not Chenopodium album (3), Sal k 1 can be considered an allergenic marker to discriminate among patients allergic to Chenopodiaceae pollens. For example, it has been shown that approximately 67% of individuals with positive specific IgE determination to Salsola kali had detectable IgE antibodies to Sal k 1 (1, 2).

ImmunoCAP® Allergen w232 nSal k 1 can thus be used as a marker of saltwort sensitization for specific immunotherapy (SIT).

Allergen Description
Saltwort/Russian thistle originated in Europe and Asia and is now common throughout most arid and semi-arid regions of the world. One of three saltwort allergens characterized to date is Sal k 1, a 43 kDa protein belonging to the pectin methylesterase family (1, 3). In plants, pectin methylesterases play an important role in cell wall metabolism during fruit ripening. They have also been described as allergens in pollen and plant foods (3, 4). A minor allergen from birch pollen (Bet v 8) and Act d 7 from kiwi also belong to this family (5, 6).

Cross-Reactivity
Significant cross-reactivity has been described between Salsola and Chenopodium spp. as well as with foods such as Swiss chard (7, 8). However, as a major allergen, Sal k 1 is not present in pollen of the related species of Chenopodium album and therefore probably not in other members of the Chenopodiaceae (3).

Cross-reactivity of Salsola kali with other plants of similar distribution and biological characteristics has also been described, but this cross-reactivity may result from other panallergens since no pectin methylesterases have been isolated from these plants (9).

Clinical Experience
Pollens from the Chenopodiaceae family, to which both Chenopodium and Salsola belong, are reported as important sources of pollinosis in the western United States and in temperate European countries (10, 11). Chenopodiaceae sensitization is a severe problem in semi-arid desert countries such as Saud Arabia, Iran and Kuwait where these weeds are the main cause of sensitization, probably due to their use in greening programmes (12, 13). Saltwort pollen commonly induces asthma, allergic rhinitis and allergic conjunctivitis in sensitized individuals (7, 9, 14). Russian thistle can also cause dermatitis in persons who come into direct contact with the plant (15).
References


