Clinical Utility
Cyn d 1 belongs to Group 1 grass pollen allergens which are the most frequently recognized grass pollen allergens. This allergen group is unique to the grass family and no cross-reactive allergens in pollen of other plants are known. Some diversity exists among members of the Group 1 grass pollen allergens of different subfamilies of grasses, making Cyn d 1 from Bermuda grass at least partly immuno-logically distinct from Phl p 1 from timothy grass. Thus, Cyn d 1 is specifically suited as a marker of Bermuda grass pollen sensitization (1, 2).

Allergen Description
Bermuda grass is found in warm climates all over the world and its pollen contains at least 12 IgE-binding proteins (3, 4). Cyn d 1 is a major Bermuda grass allergen and is an expansin protein of 32 - 34 kDa.

Expansins are unusual proteins that mediate cell wall extension in plants. They are also known as Group 1 grass allergens, which are highly cross-reactive glycoproteins exclusively expressed in the pollen of many grasses (2).

Cyn d 1 is a member of this group and 95% of patients allergic to grass pollen are allergic to Group 1 grass allergens (5). The frequency of sensitization to Cyn d 1 in Bermuda grass-allergic individuals has been reported to be between 76% and 100% (6, 7).

Clinical Experience
Bermuda grass is an important source of seasonal aero-allergens in many areas of the world, especially in tropical and subtropical climates. Bermuda grass pollen is a potent inducer of asthma, allergic rhinitis and allergic conjunctivitis (8-10).

Specific IgE tests for Bermuda grass demonstrate that it is one of the most prevalent allergen among children with allergic rhinitis (11). Bermuda grass pollen is also significantly associated with sinusitis (8).

Cross-Reactivity
Bermuda grass is expected to be highly cross-reactive with other species of the subfamily Chloridoideae e.g. Buffalo, Windmill and Grama grasses (12-15).

Single recombinant Group 1 grass allergen contains many of the IgE epitopes of group 1 isoallergens found in a number of different grass species (16). Thus Group 1 grass pollen allergens are highly homologous, but not all of the antigenic epitopes are cross-reactive (8).

Cyn d 1 is to some extent immunologically distinct from Phl p 1 from timothy grass and is therefore a suitable marker for sensitization to Bermuda grass.
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