Suggested birch pollen test profile

MAJOR BIRCH ALLERGEN
- PR-10 protein
- Specific for birch
- Cross-reactive
- Sensitive to heat and digestion
- **Indication for birch pollen SIT**

MINOR BIRCH POLLEN ALLERGENS
- Profilin
- Cross-reactive
- Rarely occurring as sole sensitizer in patients with clinical symptoms
- Sensitive to heat and digestion

- Polcalcin
- Cross-reactive
- Rarely occurring as sole sensitizer in patients with clinical symptoms

- Isoflavone reductase
- Cross-reactive
- Rarely occurring as sole sensitizer in patients with clinical symptoms

Sensitization to Bet v 2, Bet v 4 and/or Bet v 6 without Bet v 1 sensitization indicates low suitability for birch pollen SIT. **Keep looking for the primary sensitizer.**
Birch pollen components for a complete patient management

**Betula verrucosa**

- **Bet v 1**: t 215, PR-10 protein (Pathogenesis-Related group 10).
  - Specific for birch.
  - Patients sensitized to Bet v 1 may also react to other PR-10 proteins, see table below.
  - Up to 95% of birch pollen allergic patients have IgE antibodies to Bet v 1.

- **Bet v 2**: t 216, Profilin.
  - A cross-reactive component. Profilins are found in pollens, plant foods and latex and share high degree of similarity across species.
  - 15–30% of pollen-allergic patients are sensitized to Bet v 2.

- **Bet v 4**: t 220, Polcalcin.
  - A cross-reactive component. Polcalcins are found in grass, tree and weed pollens and share high degree of similarity across species.
  - About 10% of pollen sensitized individuals have IgE antibodies to Bet v 4.

- **Bet v 6**: t 225, Isoflavone reductase.
  - A cross-reactive component. Isoflavone reductases are found in common birch pollen related foods.
  - Minor birch pollen allergen.

### Examples of allergens containing Bet v 1-like (PR-10) proteins

<table>
<thead>
<tr>
<th>Trees</th>
<th>Fruits</th>
<th>Nuts &amp; Legumes</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birch</td>
<td>Apple</td>
<td>Hazelnut</td>
<td>Carrot</td>
</tr>
<tr>
<td>Alder</td>
<td>Pear</td>
<td>Walnut</td>
<td>Celery</td>
</tr>
<tr>
<td>Beech</td>
<td>Peach</td>
<td>Almond</td>
<td>Parsley</td>
</tr>
<tr>
<td>Chestnut</td>
<td>Cherry</td>
<td>Peanut</td>
<td>Asparagus</td>
</tr>
<tr>
<td>Hazel</td>
<td>Kiwi</td>
<td>Soy bean</td>
<td>Potato</td>
</tr>
<tr>
<td>Hornbeam</td>
<td>Apricot</td>
<td>Kidney bean</td>
<td></td>
</tr>
<tr>
<td>Oak</td>
<td>Strawberry</td>
<td>Pea</td>
<td></td>
</tr>
</tbody>
</table>

Most PR-10 proteins are digestive and heat labile proteins, primarily localized to the pulp of the fruit.