Background

Plant lipid transfer proteins (LTP) are highly conserved proteins of approximately 10 kD. They are found in the seeds, stems, flowers, leaves, and pollen of plants, and are considered panallergens. LTPs are typically associated with more severe and systemic reactions such as urticaria and anaphylaxis. Because these proteins are so highly conserved, sensitization to LTP from one plant can result in unexpected allergic responses to other taxonomically unrelated fruits or vegetables. Pru p 3 is an LTP isolated from peach skin and pulp, and may be used to evaluate specific IgE reactivity in patients with suspected peach allergy. While peach LTP is typically the primary allergic sensitizer, cross-reactivity to LTP of other taxonomically related or unrelated plants may be responsible for peach allergy in some patients.

Testing Algorithm

Biochemical Characteristics

Native Pru p 3 (nPru p 3) protein was purified by conventional methods from Prunus persica.

Clinical Performance

Clinical performance was demonstrated by testing serum samples from clinically diagnosed atopic and apparently healthy individuals against the nPru p 3 specific allergen. The results were obtained using the IMMULITE™ 2000 3gAllergy™ Specific IgE assay. Overall agreement, sensitivity, and specificity are presented in the table on page 2.
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### Allergen: nPru p 3

<table>
<thead>
<tr>
<th>Allergen</th>
<th>Positive (≥0.10 kU/L)</th>
<th>Negative</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>nPru p 3</td>
<td>22</td>
<td>23</td>
<td>45</td>
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</table>

Additional clinical performance of the nPru p 3 specific allergen was demonstrated in comparison to the whole peach extract allergen (F95): 146 clinical samples were tested with A603 and F95. The results are presented below.

### Identity Testing

Identity of nPru p 3 was verified through competitive inhibition testing using a single serum sample. A negative sample was used to measure the background response. The percentage inhibitions are represented in the graph below showing correlation to increasing inhibitor concentrations.

### Analytical Performance

**Precision:** The average within-run and total precision using three samples and two lots of nPru p 3 allergen were 3.36% and 5.93%, respectively.

**Linearity:** Two samples were diluted in serial dilutions to 5 levels using two allergen lots. The undiluted (neat) and diluted samples were tested with the specific allergen to demonstrate linearity at concentrations within the assay limits. Regression statistics for each allergen comparing the observed results to expected results are presented below.

### References: