Specific IgE (sIgE) antibodies to both bee and wasp venom can be due to a sensitivity to both insect venoms or due to cross-reactive carbohydrate determinants (CCDs). Investigating whether a basophil activation test (BAT) with both venoms as well as with bromelain and horseradish peroxidase (HRP) or recombinant allergen-based IgE testing can improve the diagnostic procedure. Twenty-two Hymenoptera-venom allergic patients with sIgE antibodies to both bee and wasp venom were studied. sIgE antibodies to MUXF3 CCD, bromelain, HRP, rApi m 1, and rVes v 5 were determined, and a BAT (Flow2 CAST) with venom extracts, bromelain, and HRP was performed. Further recombinant allergen-based IgE testing was done by using an ELISA, if required. The reactivity of basophils was calculated from the insect venom concentration at half-maximum stimulation. Double positivity/double negativity/single positivity to rApi m 1 and rVes v 5 was seen in 12/1/9 patients. Further recombinant allergen-based IgE testing in the last ones revealed positive results to the other venom in all cases except one. BAT was double positive/double negative/single positive in 6/2/14 patients. Four patients with negative results in sIgE antibodies to CCDs had positive results in BAT. BAT with
bromelain/HRP showed a sensitivity of 50%/81% and a specificity of 91%/90%. Component-resolved IgE testing elucidates the pattern of double positivity, showing a majority of true double sensitizations independent of CCD sensitization. BAT seems to add more information about the culprit insect even if the true clinical relevance of BAT is not completely determined because of ethical limitations on diagnostic sting challenges. BAT with HRP is a good method to determine sensitivity to CCDs.