

Food Allergy: Flow CAST® Citation List

Peanut - Allergy Follow up

- **Patil SU**, Calatroni A, Schneider M, Steinbrecher J, Smith N, Washburn C, Ma A, Shreffler WG. Data-driven programmatic approach to analysis of basophil activation tests. *Cytometry B Clin Cytom.* **2017** Jun 15. doi: 10.1002/cyto.b.21537. PubMed PMID: 28618453.

Peanut Flow CAST® assay has been the core standardize assay for the first evaluation of on an automated analysis of Basophil activation test results. Flow CAST® results from a cohort of peanut allergic patients followed in the years. “..this data-driven automated gating algorithm for basophil activation testing provides a data analysis platform to promote transparency, reproducibility, quality controls, and data sharing in clinical research using basophil activation testing..”

Peanut - Diagnosis

- **Song Y**, Wang J, Leung N, Wang LX, Lisann L, Sicherer SH, Scurlock AM, Pesek R, Perry TT, Jones SM, Li XM. Correlations between basophil activation, allergen-specific IgE with outcome and severity of oral food challenges. *Ann Allergy Asthma Immunol.* **2015** Apr;114(4):319-26. doi: 10.1016/j.anai.2015.01.006. PubMed PMID: 25841330.

This article is one of the best clinical evaluation of the correlation of BAT testing using Flow CAST® and CAST® peanut allergen with the severity of the oral food challenge in a cohort of 65 patients. “..These results indicate that basophil activation testing can enhance discrimination between allergic and nonallergic individuals and could serve as an additional tool to predict clinical severity.”

Peanut – Allergen Standardization

- **Schneider M**, Shreffler WG, Jermann T. Evaluation of natural purified Peanut allergens for the use in diagnosis with Basophil activation test. *EAACI Congress 2012*, 16.-20. June, Geneva, Switzerland / **Poster Abstract No 1447.**

The poster shows the characterization of BÜHLMANN CAST® allergens to perform peanut allergy diagnosis and follow up. “..Component resolved diagnosis with purified peanut allergens provides insights into individual sensitivity of patients to single allergen components.” “..Allergen doses (analytical concentration) for best discrimination between patients (n=12) and controls (n=5) were determined by ROC curves.”

Milk - Diagnosis and Follow up

- **Rubio A**, Vivinus-Nébot M, Bourrier T, Saggio B, Albertini M, Bernard A. Benefit of the basophil activation test in deciding when to reintroduce cow's milk in allergic children. *Allergy.* **2011** Jan;66(1):92-100. doi: 10.1111/j.1398-9995.2010.02432.x. PubMed PMID: 20608919.

This clinical evaluation show the superior accuracy of BAT testing in comparison to CMA OFC results, indicating the benefit of the use of the assay the follow up of the patient food allergy. With a safe lab test can be possible to determine if the tolerance to milk is reached in order to decide if to reintroduce the food into the diet.

“..this study indicates that the BAT is a valuable tool in helping to decide when an oral challenge can safely be undertaken in the follow-up of IgE-mediated CMA.” “..We therefore believe that the amount of unnecessary, costly and dangerous positive challenges that could be avoided justifies the extra expense of this functional test.”

Milk - Diagnosis

- **Grandné V**, Agabriel C, Sainte-Laudy J, Fabre A, Deneux I, Sarles J, Bongrand P, Vitte J. The basophil activation test confirms milk allergy in non sensitized children with allergy symptoms. *EAACI Congress 2012*, 16.-20. June, Geneva, Switzerland / **Poster Abstract No 365.**

The Poster highlight the superior sensitivity of Flow CAST assay in the diagnosis of cow milk allergic patient where specific IgE level are undetectable.

“..BAT brought the biological proof of food allergy in 33 out of 50 CM allergic children with NSPT and undetectable specific serum IgE”

“..A positive CM BAT in such patients might therefore avoid OFC, but a negative test still needs OFC confirmation.”

Sesame

- **Teodorowicz M.** et al, Immunological Characterization of Dutch Sesame Seed-Allergic Patients. Int Arch Allergy Immunol **2016**;169:13–22. DOI: 10.1159/000443641.

Flow CAST and Sesame CAST allergen have been demonstrated to be helpful in identify sesame allergic patients, specifically the ones reacting to the oleosin.

“..In this study, the BAT assay gave an added value to the ImmunoCAP inhibition experiments and Western blot analysis in determinating the clinical relevance and immunological cross-reactivity profile of IgE-sensitized sesame seed-allergic patients. The great advantage of the BAT over the slgE measurements is the possibility of discriminating between clinically relevant and non-relevant sensitizations..”

Tree Nut – cross reactivity discrimination

- **Schneider M,** Eberlein B, León Suárez I, Hausmann O, Wolanczyk-Medrala A, Medrala W, Romano A, Seneviratne S, Snorton A, Niederberger C, Jermann T. Towards a clinical validation of the BÜHLMANN Flow2 CAST® basophil activation test for drug and protein allergy. Poter XXV. EAACI annual meeting, Warsaw, 06.-10. June **2009**.

Flow CAST® assay and CAST® allergens standardization report and cases for main clinical indication for BAT testing.

“..These evaluations confirm that this test has the potential to be a very reliable tool for routine application in cellular allergy diagnosis for drugs, hymenoptera venom and food allergy.”

Basophil IgE non-responder

- **Puan KJ,** Andiappan AK, Lee B, Kumar D, Lai TS, Yeo G, Bercin D, Starke M, Haase D, Lum J, Chew FT, Connolly J, Wong SC, Zolezzi F, Poidinger M, Wang DY, Rotzschke O. Systematic characterization of basophil anergy. Allergy **2016**; DOI: 10.1111/all.12952.

this article is the first whole characterization of basophil non responder for the IgE receptor, shedding light on potential pathophysiological role for this basophil anergy.

“..Basophil anergy thus seems to function as activation barrier to prevent unwanted reactions against minor allergens. It may therefore be relevant for diagnostic purposes or therapeutic interventions of allergic diseases.”

Other Foods

- **Soh JY,** Huang CH, Chiang WC, Llanora GV, Lee AJ, Loh W, Chin YL, Tay VY, Chan YH, Dianne D, Lee BW. Anaphylaxis to galacto-oligosaccharides--an evaluation in an atopic population in Singapore.. Allergy. **2015** Aug;70(8):1020-3. doi: 10.1111/all.12645. Epub 2015 May 22.

This article show the unique possibility offered by BAT testing to clearly identify patient allergic to galacto oligosaccharides in an Asian population. An algorithm for the appropriate diagnostic workflow is provided.

- **Jaeckels N,** Bellinghausen I, Fronk P, Heydenreich B, Saloga J, Decker H. Assessment of sensitization to grape and wine allergens as possible causes of adverse reactions to wine: a pilot study. Clin Transl Allergy. **2015** Jun 22;5:21. doi: 10.1186/s13601-015-0065-8.

This article show the unique potential of BAT testing for diagnosis of allergy were other testing is not available.