**BasoFunction Test**  
An Ex Vivo Blood Challenge Test for Allergy

**Test Name:** BasoFunction HRT (Histamine Release Test)  
**Test Codes:** See Individual Allergens  
**CPT Codes:** 86343, 83088

**Test Name:** Basophil Activation Test (fMLP)*  
**Test Code:** 501250  
**CPT Code:** 86343, 83088  
*(Automatically included with BasoFunction Test)*

**Clinical Utility:** The BasoFunction test may be useful with patients who have a suggestive history and for whom skin testing and/or in vitro specific IgE testing is not appropriate or available.

**Specimen Requirement:**
- Whole blood preserved with Sodium Heparin (8-10 mL) and maintained at 18 - 25 °C (room temperature) in an insulated container. Do not use lithium heparin tube.  
- Specimen to arrive within 48 hours of the draw. Samples are to be shipped by overnight delivery. Samples are accepted Monday through Friday.  
- Hemolyzed blood will be rejected.

**Background:** Adverse reactions to drugs and chemicals are common problems that the allergist is often asked to evaluate. The immunological basis and the clinical symptoms in response to these antigens may vary from patient to patient. Both true allergic and pseudo-allergic reactions can result in anaphylactoid-type symptoms because common mediators are released (e.g. histamine leukotrienes, etc.). It is often not possible to implicate IgE in a direct role for many adverse reactions and thus the usual diagnostic tools of skin testing or in vitro specific IgE testing may not be useful. The Basophil Activation Test assesses the ability of the patient’s basophils to release histamine when activated by a non-specific stimulus (fMLP). The BasoFunction test measures histamine released in vitro following challenge with the suspected allergen.

**Report Format and Interpretive Comments:**

**Basophil Activation Test:** The amount of histamine (ng/mL) released following fMLP stimulation is reported. The Basophil Activation Test (fMLP) result is an indicator of the activation potential of the patient’s basophils. A low response indicates the basophils are hypo-responsive; this occurs in 5 to 10 percent of individuals. Reference ranges were determined on a population of healthy controls that had responsive basophils.

**BasoFunction:** The amount of histamine (ng/mL) released following specific allergen stimulation is reported. Reference ranges were determined on a population of healthy individuals without a history of adverse reactions to the indicated allergens. The reference range varies for each allergen (see report). Patients with values above these thresholds are sensitized and should be further evaluated before therapeutic administration of the drug. Since placebo controlled challenge studies are difficult to perform, the true predictive value of the test is unknown for most drugs, and caution must be exercised with regard to patients who are non-responders to a suspected allergen. The sensitivity of the test is not known, and the allergen may still cause a clinically significant adverse reaction.

**Method:**

1. **Cell Setup:** Peripheral blood leukocytes are enriched from heparinized whole blood and stimulated with fMLP Basophil Activation Test, allergen (BasoFunction Test) or buffer alone. Following a brief culture the supernatant containing secreted histamine is separated from the cells.

2. **Histamine Test:** A validated histamine ELISA quantifies histamine that was secreted by any stimulated basophils in response to the antigen and the stimulating control. IBT Laboratories determined the performance characteristics of this test. It has not been approved or cleared by the FDA.

**Antigen List** (Please call Client Services for other antigens)

**Analgesics:**  
Acetaminophen  
Diprymethoxypropionphenylalanine  
Ibuprofen  
Indomethacin  
Ilosysteine  
Lys-Aspirin  
Mefanamic Acid  
Propyphenazone

**Antibiotics:**  
Ampicillin  
Cefazolin  
Cefuroxime  
Cefalosporin C  
Ciprofloxacin  
Penicillin; Benzylpenicilloyl-ploylysine  
Penicillin; minor det. mix  
Penicillin: Sodium-Nitrite

**Food Additives:**  
Amaranth  
Brilliant Black BN  
Chromotrope B  
Erythrosine  
Indigo Carmine  
Monosodium Glutamate (MSG)  
New Coccine  
Patent Blue V  
Potassium-Metabisulphite  
Quinoline Yellow  
Sodium-Benzoate  
Sodium-Nitrite  
Sodium-Salicylate  
Sunset Yellow FCF  
Tartarazine

**References:**