

ECP (Eosinophil Cationic Protein)

Test Name: ECP (Eosinophil Cationic Protein)

Test Code: 42

CPT Code: 86849

Clinical Utility:

- Serum ECP levels correlate with the severity of the patient's asthma.
- Increased ECP levels are predictive of exercise induced asthma and the propensity to develop a late asthmatic reaction (LAR).
- ECP levels increase after allergen exposure and these increases are reduced after immunotherapy.
- Serum ECP measurements may be used to monitor anti-asthma treatment and help optimize drug dosing.

Specimen Requirements:

- 1.0 mL Serum, **specimen collection is critical.**
- Collect the blood in a 4 mL Vacutainer hemogard SST® tube.
- The tube should be completely filled and then gently inverted 5 times.
- Allow the blood to clot at room temperature (20-24°C) for 60 minutes (+/- 5 min).
- Centrifuge the serum at 1000 - 1300 x g for 10 minutes at room temperature.
- The serum should be immediately frozen and then shipped frozen via overnight courier with dry ice.

Units and Normal Reference Range:

ECP results are reported in nanograms per mL (ng/mL). The reference interval is less than 24 ng/mL. This represents the lower 95th percentile of a healthy adult population.

Method: Enzyme Immunoassay. This test has not been cleared or approved by FDA. Its validation and performance characteristics have been determined by IBT Laboratories.

Background:

Eosinophils, originating from bone-marrow stem cells, appear in large numbers at sites of inflammation and in response to certain parasites, especially helminths. Although most reside in the tissues, approximately 1% of the eosinophil population circulates in the blood. When activated these cells degranulate and release several highly basic (cationic) proteins into the surrounding tissue.

Granule Cationic Proteins in Eosinophils

- Major Basic Protein (MBP)
- Eosinophil Cationic Protein (ECP)
- Eosinophil-Derived Neurotoxin (EDN)
- Eosinophil Peroxidase (EPO)

The eosinophil is a major component of the inflammatory cell infiltrate in the asthmatic lung. The mediators from this cell are now recognized to be responsible for some of the signs and symptoms of asthma, particularly the allergic type. When eosinophils are activated, they secrete eosinophil cationic protein (ECP), a toxic glycoprotein which is stored in the cytoplasmic granules. This molecule has a basic pH (>11) and a molecular weight of 19,000. ECP has potent neurotoxic properties and can kill parasites at low doses by disrupting their cell membranes.

References:

1. Weller PF. Eosinophils in Clinical Immunology Principles and Practice, 2nd Edition, Rich RR et al (Editors), 2002, Mosby.
2. Venge P. Serum measurements of ECP in bronchial asthma. Clin Exp Allergy 1993; 23 (2):3 – 7.
3. Zimmerman B. Clinical experience with the measurement of ECP: usefulness in the management of children with asthma. Clin Exp Allergy 1993; 23 (2): 8 – 12.
4. D'Amota G et al. Measurements of serum levels of ECP to monitor patients with seasonal respiratory allergy induced by Parietaria pollen. Allergy 1996; 51: 245-250.
5. Czech W et al. Serum ECP is a sensitive measure for disease activity in atopic dermatitis. Br J Dermatol 1992; 126: 351-355.

For more information, contact

IBT Laboratories

11274 Renner Boulevard, Lenexa, Kansas 66219

913.492.2224 800.637.0370

www.ibtlabs.com