LABORATORY SERVICES
IMPORTANT TEST ANNOUNCEMENT

Monocyte Type I and II Interferon Signature Quantitation by Flow Cytometry

Test Code: T1A2MP **Live Date:** 11/15/2023

Methodology: Flow Cytometry

Performed:

- Internal Samples can be collected Monday -- Friday and should be received no later than 3 pm on Friday for testing to be performed
- Weekend Testing: For testing to be performed over the weekend, please provide prior notice to the Diagnostic Immunology lab by emailing LabDiagnosticImmunology@nationwidechildrens.org or calling 614-722-2994
- Samples from external institutions should be collected between Monday - Thursday only. If an external sample is drawn on Thursday, it should be sent with Overnight shipping to ensure that the sample is received by 3 pm on Friday
- For any urgent testing requests, please contact the Diagnostic Immunology Lab Director at 614-722-2994
- External samples must be accompanied by a completed requisition form and patient information form (to facilitate interpretation of results)

Turnaround Time: 36 hours

Specimen Required:

- **Collect/Specimen Volume:**
  - 3 mL purple top tube (EDTA); minimum 1 mL
  - 3 mL green top tube (Sodium Heparin), no gel; minimum 1 mL
- **Specimen Preparation:** Do not centrifuge
- **Storage/Transport/Temperature:** Keep at room temperature
- **Stability**: 72 hours
- **Comments:** The primary objective of this assay is to detect and quantify surrogate markers for Type I and Type II Interferon (IFN) response signatures in CD14++ (bright) monocytes. A Type I IFN response elicited by multiple Type I IFN cytokines (e.g. IFN-alpha, IFN-beta, etc.) is a key contributor to antiviral responses and overall immune regulation. A Type II IFN (IFN-gamma) response has been shown to be a critical modulator of host defense by stimulating macrophage activation, antigen presentation, activation of the Th1 immune response, and induction of proinflammatory cytokine production. A Type I IFN signature will be identified by expression of CD169 (SIGLEC-1) and a Type II IFN signature will be identified by expression of CD274 (PDL-1), on CD14++ (bright) monocytes.

  This assay can be used broadly in several clinical contexts for the assessment of Type I and II IFN responses, including inborn errors of immunity (IEIs), including primary immunodeficiencies, autoinflammatory syndromes, and primary immune regulatory disorders (PIRDs), systemic lupus erythematosus (SLE), Type I interferonopathies, viral infections, among others. For example, SLE patients demonstrate a typical Type I IFN signature in this assay, while Hemophagocytic Lymphohistiocytosis (HLH) demonstrates a class Type II IFN signature in this assay. In addition to diagnostic evaluation, this assay can also be used to monitor response to treatment, including JAK inhibitors (JAKi), Type I IFN blockers (anifrolumab, sifalimumab), and anti-IFN-gamma (emapalumab) therapies.

Clinical Report: Reference intervals and a brief interpretive report on the results will be provided as part of the clinical report.

If you have any additional questions about testing for T1A2MP please refer to the **Laboratory Test Directory (**Laboratory Services Test Directory | Home**)** or call Client Services at 614-722-5477