PROMETHEUS®
Therapeutics & Diagnostics
For the person in every patient

PROMETHEUS® Thiopurine Metabolites
Cat. # 3200

Test Description

PROMETHEUS® Thiopurine Metabolites testing assists physicians in optimizing ongoing dosing of thiopurine immunosuppressant therapy to reach and maintain therapeutic goal. Thiopurine metabolite testing also helps to identify drug metabolite levels that may lead to toxicity and some of the reasons for treatment failure.

- A quantitative evaluation of 6-TGN (thioguanine nucleotide) and 6-MMPN (methyl mercaptopurine nucleotide)
- **Specimen Requirements** - 5.0 mL Whole Blood in EDTA / Lavender Top Tube
- **Shipping Requirements** – Ambient or cold pack (Do Not Freeze)
- **Storage Stability** – 3 days ambient, 8 days refrigerated
- **Turn Around Time** – 3 business days from date of receipt

Test Information

Catalog Number	Test Name	Assay	Reference Value	Result Identifier*
3200	Thiopurine Metabolites	6-MMPN, Quantitative HPLC	< 5700 pmole/8X10^8 RBC	A00009
		6-TGN, Quantitative HPLC	230 – 400 pmole/8X10^8 RBC	A00010

*Result identifier provided for use in HL7 applications.

Laboratory Description

- Prometheus is located in San Diego, CA. **Tax ID#** 33-0685754 **NPI#** 1073642641.
- Licensed in several states including New York and California.
- This test was developed and its performance characteristics determined by Prometheus Laboratories Inc. It has not been cleared or approved by the U.S. Food and Drug Administration. Prometheus Laboratories Inc. is a CAP-accredited CLIA laboratory.

CPT Codes (as applied by Prometheus)

- **82542(X1),** Quantitative HPLC (High Pressure Liquid Chromatography) for each nucleotide in peripheral RBC, separate stationary and mobile phase.

Literature References

- Dubinsky M, et al., Pharmacogenomics and metabolite measurement for 6-mercaptopurine therapy in patients with inflammatory bowel disease. *Gastroenterology*. 2000;118:705-713.
- Seidman E.G., Clinical use and practical application of TPMT enzyme and 6-mercaptopurine metabolite monitoring in IBD. *Rev Gastroenterol Disord*. 2003;3(suppl 1):S30-S38.
- Cuffari C, et al., Utilisation of erythrocyte 6-thioguanine metabolite levels to optimize azathioprine therapy in patients with inflammatory bowel disease. *Gut*. 2001;48:642-646.
- Moreau A, et al., Association Between 6-Thioguanine Nucleotide Levels and Clinical Remission in Inflammatory Disease: A Meta-analysis. *Inflamm Bowel Dis*. 2014;20(3):464-471.
- Amin J, et al., Update 2014: Advances to Optimize 6-Mercaptopurine and Azathioprine to Reduce Toxicity and Improve Efficacy in the Management of IBD. *Inflamm Bowel Dis*. 2015;21:445-452.
- Benkov, K. et al., Role of Thiopurine Metabolite Testing and Thiopurine Methyltransferase Determination in Pediatric IBD. *JPGN*. 2013;56:333-340.

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Thiopurine Drug Metabolites

2011134

Ordering Recommendation

Optimize therapy for thiopurine drugs. Identify thiopurine metabolite concentrations that may lead to toxicity.

Additional Technical Information

ARUP Consult® Disease Topics

- Thiopurine Methyltransferase Testing - TPMT
- Rheumatoid Arthritis - RA
- Inflammatory Bowel Disease - IBD
- Organ Transplantation - Immunosuppressive Drugs

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Mnemonic

THIOPMET

Methodology

Quantitative Liquid Chromatography/Tandem Mass Spectrometry

Performed

Tue, Thu, Sun

Reported

1-5 days

New York DOH Approval Status

This test is New York DOH approved.

Submit With Order

Specimen Required

Patient Preparation:

Collect: Lavender (EDTA), pink (K_2EDTA)

Specimen Preparation: Transport 5 mL whole blood. (Min: 3.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Frozen samples, Hemolyzed samples.

Remarks:

Stability: Ambient: 72 hours; Refrigerated: 8 days; Frozen: Unacceptable

Reference Interval

Test Number	Components	Reference Interval
		230-400 pmol/8 x 10^8 RBC
		Less than 5701 pmol/8 x 10^8 RBC

Interpretive Data

Concentrations of 6-thioguanine nucleotide (6-TGN) less than 230 pmol/8 x 10^8 RBC may indicate a reduced response to therapy; 6-TGN concentrations greater than 400 pmol/8 x 10^8 RBC may indicate a higher risk for leukopenia. Concentrations of 6-methyl mercaptopurine nucleotide (6-MMPN) greater than 5700 pmol/8 x 10^8 RBC may indicate a higher risk for hepatotoxicity.

Statement B: This test was developed and its performance characteristics determined by ARUP Laboratories. The U.S. Food and Drug Administration has not approved or cleared this test; however, FDA clearance or approval is not currently required for clinical use. The results are not intended to be used as the sole means for clinical diagnosis or patient management decisions.

Note

CPT Code(s)

83789

Components

Component Test Code*	Component Chart Name	LOINC
2011138	6-TG Nucleotides RBC	32660-3
2011139	6-MMP Nucleotides RBC	32654-6

** Component test codes cannot be used to order tests. The information provided here is not sufficient for interface builds; for a complete test mix, please view this test within the Laboratory Test Directory found at www.aruplab.com*

Aliases

- TPMT (Thiopurine Drug Metabolites)