

# HistoTrak Qualitative Droplet Digital PCR

Langerhans cell histiocytosis (LCH), disseminated juvenile xanthogranuloma (JXG) family neoplasms, and pediatric Erdheim-Chester disease (ECD) are myeloid-derived clonal inflammatory disorders driven by recurrent kinase-activating mutations, most frequently in the MAPK signaling pathway. BRAF p.V600E is a hotspot mutation that strongly activates the MAPK pathway and is commonly harbored by multiple tumors, including histiocytic, hematopoietic, brain, papillary thyroid, and melanocytic neoplasms. It is the most prevalent mutation in LCH and ECD, carries prognostic significance, especially in multisystem LCH, and is a stable marker of histiocytoses that can be leveraged as an indicator of minimal residual disease (MRD). Targeted therapy with MAPK pathway inhibitors has been highly effective in the treatment of histiocytosis with mutations in pathway genes, including the BRAF p.V600E mutation<sup>1-5</sup>. The HistoTrak test is a highly sensitive droplet digital PCR (ddPCR)-based molecular assay designed to measure MRD in patients with BRAF V600E-driven histiocytic and other neoplasms. It is used for monitoring the disease burden of patients with histiocytosis that harbor a BRAF V600E mutation, during or after therapy. In this setting, it is NOT a diagnostic test. Prior BRAF V600E mutation status should be known before performing the test. In select instances, HistoTrak test can be used to determine BRAF V600E mutation status on tissue (FFPE) specimen, where the BRAF V600E immunohistochemical finding is equivocal or not available. For more information, call the lab at 513-636-9820.

## Mutation Target:

BRAF c.1799T>A p.V600E

## Reporting Units:

**Qualitative:** Positive / Suspicious / Negative

## Acceptable Specimens:

- 5 mL whole blood in EDTA tube
- 5 mL bone marrow in EDTA tube
- FFPE tissue: 1 H&E slide and 6 unstained slides at 5 microns each
- Paraffin block (block will be returned upon completion of test)

## Unacceptable Specimens:

- Decalcified tissue
- Frozen whole blood or bone marrow
- Sample collected in heparin

## Shipping Conditions:

- Blood and bone marrow samples at 4°C in insulated container by overnight courier. Do NOT freeze.
- Slides or blocks at ambient temperature.
- **For all samples, ship for delivery on Monday through Friday. Receiving docks are CLOSED on weekends and holidays; do NOT ship if delivery will occur on those days.**

## Testing Schedule:

HistoTrak testing is performed Mon-Fri. For testing outside of this schedule, call the lab at 513-636-9820.

**TAT:** 3-4 business days.

## CPT Codes:

81210

## Clinical Lab Index:

HistoTrak:

<https://www.testmenu.com/cincinnatichildrens/Tests/1130008>

## Contact Information:

Cincinnati Children's Division of Pathology  
Molecular and Genomic Pathology Services (MGPS)

Phone: 513-636-9820

Fax: 513-517-7099

Email: [pathology@cchmc.org](mailto:pathology@cchmc.org)

Website: [cincinnatichildrens.org/pathology](http://cincinnatichildrens.org/pathology)

For pricing or billing questions, call 513-636-4261.

## Shipping Address:

Cincinnati Children's Hospital Medical Center  
Attn: Molecular and Genomic Pathology Services (MGPS)  
240 Albert Sabin Way, R2.001  
Cincinnati, OH 45229

## References:

1. Allen C, et al. *N Engl J Med*. 2018; 379: 856-868.
2. Heritier S, et al. *J Clin Oncol*. 2016; 34: 3023-3030.
3. Picarsic J, et al. *Acta Neuropathol Commun*. 2019; 7:168.
4. Goyal G, et al. *Blood*. 2020; 135: 1929-1945.
5. Lee L, et al. *Blood Adv* 2020; 4: 717-727.