natera™ | Signatera™
Residual disease test (MRD)

ABOUT THIS TEST:

Signatera™ is a bespoke mPCR-NGS assay for detection of circulating tumor DNA (ctDNA) in the plasma of patients previously diagnosed with cancer. Individual-specific mutation signatures are identified by up front tissue and matched normal whole exome sequencing.

Patient & Sample Information

Patient Name:
Date of Birth:
Medical Record #:
Case File ID:
Cancer Type: Colon cancer
Tissue Collected: 03/30/2018
Tissue Received: 07/19/2019
Plasma Collected: 07/08/2020
Plasma Received: 07/09/2020
Date of Surgery:
Block ID:
Block Type:

Ordering Physician

Name:
Clinic:

NPI:
Address:

Pathology
Lab Name:
Test Order:
Additional
Reports:
Report Date: 07/16/2020

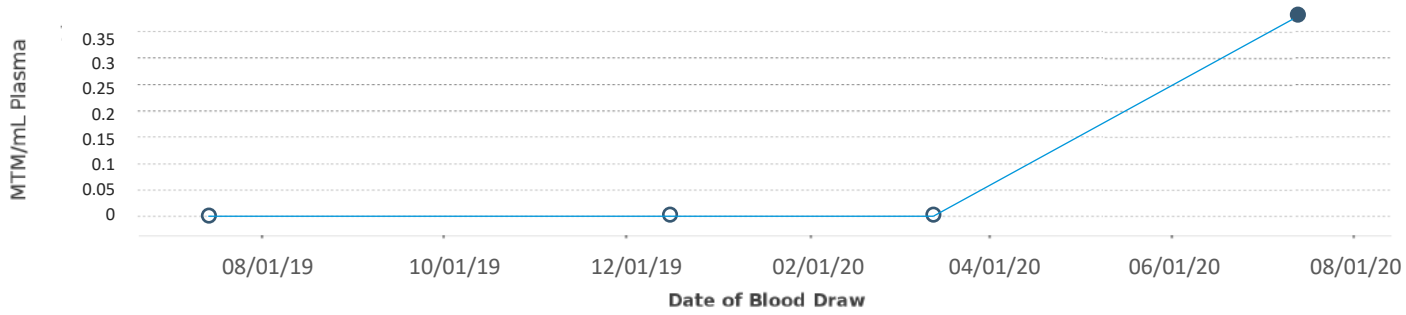
FINAL RESULTS SUMMARY

Signatera Positive ⊕

Date: 07/08/2020
MTM/mL: 0.38

Mean tumor molecules per mL is calculated based on the mean of ctDNA molecules detected per mL of the patient's plasma.

Historical Results



Date	MTM/mL
Jul 09, 2019	0.00
Dec 16, 2019	0.00
Mar 12, 2020	0.00
Jul 08, 2020	0.38

Interpretation, Recommended Test Intervals, and Limitations

Signatera is a personalized, tumor-informed test for the longitudinal detection of circulating tumor DNA (ctDNA). Interval testing is recommended for all patients. Studies have demonstrated that when ctDNA is detected (Signatera positive) following surgery or definitive treatment, the risk for disease relapse is high without further treatment. Conversely, when ctDNA is not detected, the patient may be considered at lower risk for relapse. For those with multiple timepoints, upward trending ctDNA levels are suggestive of increasing tumor burden. Test results should be interpreted within clinical context. ctDNA detection sensitivity may be limited due to blood collection within two weeks of surgery and while the patient is on therapy. The analytical sensitivity of Signatera is > 95% at 0.3 MTM/ml. Results obtained are specific to the assessed time point. A negative test result does not definitively indicate the absence of cancer. This test is not designed to detect or report germline variation, nor does it infer hereditary cancer risk for the patient. Each Signatera assay is designed to a single tumor for a given patient. At this time, multiple personalized Signatera assays cannot be developed for the same patient. This test is designed to detect ctDNA from the assayed tumor only; new primary tumors will not be detected. Testing cannot be performed in patients who are pregnant, have a history of bone marrow transplant, or history of blood transfusion within three months. This test is expected to have limited sensitivity in cancer types such as GIST, renal cell carcinomas, primary brain tumors, and lymphoma due to limited ctDNA shed.

Methodology

FFPE samples are assessed by a pathologist to identify tumor margins and percent tumor content. Tumor DNA is extracted using Qiagen AllPrep. Whole genomic DNA is isolated from peripheral blood using QIAamp DNA Blood Mini Kit to provide a baseline DNA sequence. Whole-exome sequencing is performed on tumor and peripheral blood DNA using KAPA HyperPrep library kit (Roche) with a custom xGen exome capture (IDT). Using a proprietary algorithm, putative clonal variants present in the tumor but absent in the germline DNA are identified to design the customized multiplex PCR assay. Circulating tumor DNA is extracted from plasma collected in Streck tubes using Natera's proprietary methods. The customized PCR assays are run to detect presence or absence of these variants within circulating plasma. A patient's plasma sample is considered ctDNA positive when at least two individual-specific tumor variants are detected. When fewer than two individual-specific tumor variants are observed, a negative result is issued. Tumor variation outside of the individual, tumor specific variants is not assessed. Pathology services and whole exome sequencing are performed at Ashion Analytics (CLIA ID# 03D2048606) 445 N. Fifth Street, Phoenix, AZ 85004.

Disclaimer

This test was developed and its performance characteristics determined by Natera, Inc [CLIA# 05D1082992]. The test has not been cleared or approved by the U.S. Food and Drug Administration (FDA). Although FDA is exercising enforcement discretion of premarket review and other regulations for laboratory-developed tests in the U.S., certification of the laboratory is required under CLIA to ensure the quality and validity of the tests. Pathology services and whole exome sequencing for this test was performed by Ashion Inc, [445 N 5th St., Phoenix, AZ 85004, CLIA# 03D2048606].

Approved by: J. Dianne Keen-Kim, Ph.D., FACMGG, Senior Laboratory Director

Approved by: Eric Crawford, PhD, FACMGG, Laboratory Director

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Patient & Sample Information

Patient Name:
Date of Birth:
Medical Record #:
Case File ID:
Cancer Type: Colon cancer
Tissue Collected: 05/18/2020
Tissue Received: 05/29/2020
Plasma Collected: 07/09/2020
Plasma Received: 07/13/2020
Date of Surgery:
Block ID:
Block Type:

Ordering Physician

Name:
Clinic:

NPI:
Address:

Pathology
Lab Name:
Test Order:
Additional
Reports:
Report Date: 07/22/2020

FINAL RESULTS SUMMARY

Signatera Negative

⊖

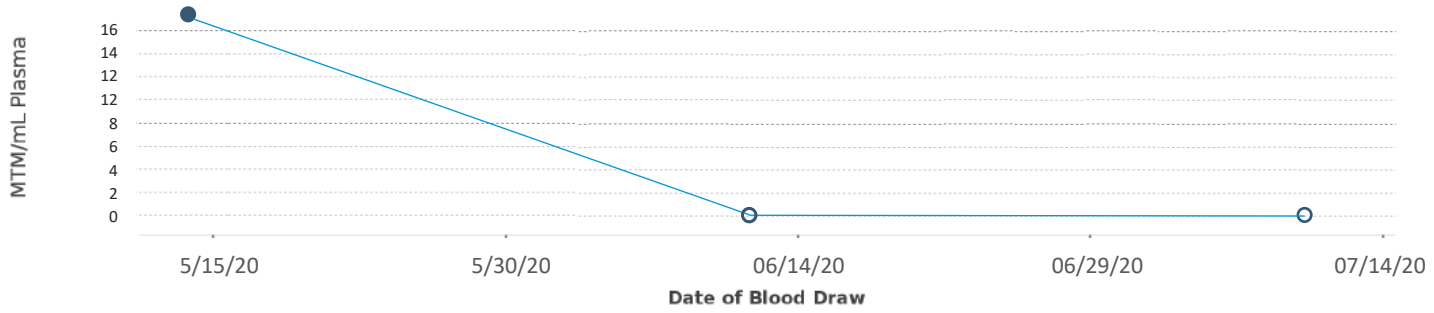
MTM/mL:

Not Detected

Mean tumor molecules per mL is calculated based on the mean of ctDNA molecules detected per mL of the patient's plasma.

Test Clinical Notes

Historical Results



Date	MTM/mL
May 14, 2020	16.96
Jun 12, 2020	0.00
Jul 09, 2020	0.00

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