

Client: Example Client ABC123  
123 Test Drive  
Salt Lake City, UT 84108  
UNITED STATES

Physician: Doctor, Example

**Patient: Patient, Example**

**DOB:** 3/19/1954  
**Sex:** Female  
**Patient Identifiers:** 01234567890ABCD, 012345  
**Visit Number (FIN):** 01234567890ABCD  
**Collection Date:** 01/01/2017 12:34

**Mismatch Repair by Immunohistochemistry**

ARUP test code 0049302

Mismatch Repair by IHC, Result

Abnormal

Abnormal immunohistochemical staining for mismatch repair proteins correlates well with the presence of microsatellite instability by PCR. The BRAF codon 600 mutation test (0051750) may be helpful in distinguishing sporadic from Lynch (HNPCC) associated colorectal cancers with abnormal MLH1 immunostaining. Controls worked appropriately.

This result has been reviewed and approved by [REDACTED]

INTERPRETIVE INFORMATION: Mismatch Repair by IHC, Result

Immunohistochemical staining for mismatch repair proteins can be used as a surrogate test for microsatellite instability as measured by PCR. Normal results correlate well with the absence of microsatellite instability, while abnormal results correlate well with the presence of microsatellite instability. Abnormal results may also qualify patients for immune checkpoint inhibitor treatment. The immunohistochemical staining pattern can also be used as a guide for the subsequent germline evaluation of mismatch repair genes (refer to Lynch Syndrome - HNPCC) testing algorithm at ARUPconsult.com). Normal staining results consist of any level of staining in the tumor cells (unless evidence of clonal loss). Abnormal staining results consist of complete loss of staining in the tumor cells, in the presence of retained staining in normal (non-tumor) cells, which serve as an internal control. An abnormal overall result may qualify patients for immune checkpoint inhibitor treatment, in the appropriate clinical setting.

Genetic counseling is recommended for the interpretation of all results.

Assay is performed on formalin fixed paraffin-embedded tissue. Antibody clone for MLH1 is ES05, MSH2 is FE11, MSH6 is EP49, and PMS2 is EP51. Detection system is a proprietary polymeric HRP.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Mismatch Repair by IHC with MLH1      Abnormal

Mismatch Repair by IHC with MSH2      Normal

H=High, L=Low, \*=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com  
500 Chipeta Way, Salt Lake City, UT 84108-1221  
Jonathan R. Genzen, MD, PhD, Laboratory Director

Patient: Patient, Example  
ARUP Accession: 21-145-400136  
Patient Identifiers: 01234567890ABCD, 012345  
Visit Number (FIN): 01234567890ABCD  
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Mismatch Repair by IHC with MSH6                      Normal

Mismatch Repair by IHC with PMS2                      Abnormal

Client Case or Ref #    ██████████

MSI Tissue Source    R Colon

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Mismatch Repair by IHC, Result	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 4:30:00 PM
Mismatch Repair by IHC with MLH1	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 4:30:00 PM
Mismatch Repair by IHC with MSH2	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 4:30:00 PM
Mismatch Repair by IHC with MSH6	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 4:30:00 PM
Mismatch Repair by IHC with PMS2	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 4:30:00 PM
Client Case or Ref #	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 6:12:00 AM
MSI Tissue Source	21-145-400136	5/19/2021 12:01:00 AM	5/25/2021 4:50:37 AM	5/25/2021 6:12:00 AM

END OF CHART

H=High, L=Low, \*=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

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