PATIENT	REPORT DATE	BOOKING ID
Mr. Devraj Garg	13 Nov 2019	#011905060353

MLH1 Immunohistochemistry

Clinician

Clinician Name: Dr. Amish Vora
Medical Facility: Hope Clinic.
Pathologist: Not Provided

Test Description

Defects in the mismatch repair (MMR) pathway is one of the best defined molecular pathways involved in both inherited and sporadic cancer pathogenesis. Established methods to classify tumors as MMR-deficinet cancers include: 1) immunohistochemistry (IHC) to measure loss of MMR protein expression; and 2) microsatellite instability analysis to identify those with a microsatellite instability-high (MSI-H) phenotype.
Well established for: Hereditary Non-Polyposis Colorectal Cancer (HNPCC)-associated cancers (i.e., cancers of the colorectum, endometrium, stomach, ovaries, urinary tract, other gastrointestinal sites and brain). Loss of MMR protein expression may help to identify those with germline MMR gene mutations, which in turn may provide individuals with an opportunity for cancer prevention through colorectal, endometrial and ovarian cancer risk management options as outlined in the NCCN guidelines.

Specimen

Sample Type: FFPE block B/7618/2016
Site: Prostrate
Pathology ID: MOLQ/IHC-47112019
Disease: Adenocarcinoma (Acinar), Prostrate Gleason score: 8

Interpretation

Stainings must be classified based *on nuclear staining intensity and distribution to generate a Combined Expression Score.*

Score **(Based on the percentage of positive cells)**	Score 0-00% Score 1: 1-33% Positive Tumor Cells Score 2: 34-66% Positive Tumor Cells Score 3: 67-100% Positive Tumor Cells
Intensity	Score 0: Least intensity Score 1: Mild intensity Score 2: Moderate intensity Score 3: Most intensity
COMBINED EXPRESSION SCORE: (The product of intensity and staining)	Total Score 0: Negative Total Score 1-3: Weak Total Score 4-6: Moderate Total Score 7-9: Strong

For full-section slides, any value of ≤3 was categorized as having loss of expression, ≥3 was categorized as presence of expression.

Methodology

Immunostaining for MLH1 protein was done using PathnSitu Mouse MLH1 monoclonal (Clone GM011) antibody (#PM098)

Note

The *MLH1* gene provides instructions for making a protein that plays an essential role in DNA repair. This protein helps fix errors that are made when DNA is copied (DNA replication) in preparation for cell division. It has been shown that immunohistochemical analysis of MLH1 expression is a practical and reliable method for the routine detection of the vast majority of carcinomas.

References

1. Uncertainty in the Utility of Immunohistochemistry in Mismatch Repair Protein Expression in Epithelial Ovarian Cancer. D Copppola *et al.* Anticancer Res. 2012 Nov; 32(11).
2. Association Between IHC and MSI Testing to Identify Mismatch Repair–Deficient Patients with Ovarian Cancer. Ji-Hyun Lee *et al.* Genet Test Mol Biomarkers. 2014 Apr 1; 18(4).
3. Colorectal Carcinomas With Isolated Loss of PMS2 Staining by Immunohistochemistry Lindsay Alpert et al. Archives of Pathology & Laboratory Medicine 2018 142:4.

MHL1: Presence of Expression

Microscopy Evaluation

HE Staining (Figure 1)

MLH1 by IHC: (Figure 2)
Percentage of cells nuclear staining: 62% (Score 2)
Intensity: (Score 3)

Combined Expression Score: 6 (Moderate)

MLH1 IHC - Tumor

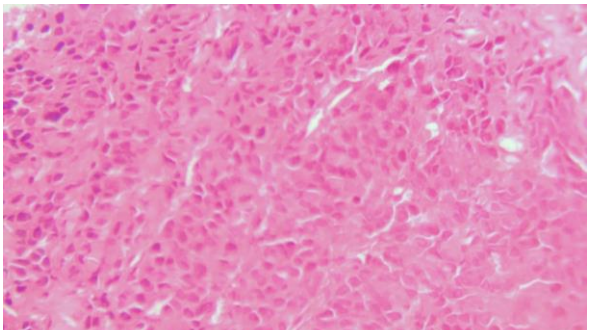

Figure 1

MLH1 IHC- Tumor Cells

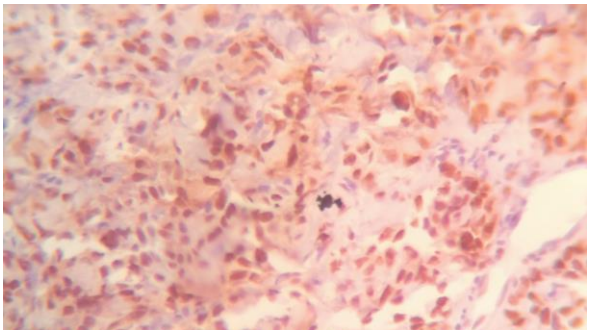

Figure 2

Reviewed By

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