impact genetics

MLH1/MSH2/MSH6/PMS2/EPCAM Somatic Tumor MMR

Sequencing and Deletion/Duplication Test

Transparent | Precise testing | Exceptional service

Test Description

Patients with loss or dysfunction of MMR protein(s) detected by immunohistochemistry (IHC) or microsatellite instability (MSI) may harbour somatic (tumor) mismatch repair (MMR) mutations but have a normal germline Lynch MMR result.

For these patients, identification of somatic pathogenic mutations in tumor that are not present in their germline increases confidence that the patient does not have Lynch syndrome.

Genes tested

MLH1, MSH2, MSH6, PMS2, EPCAM.

Sequence analysis

Our lab performs sequence analysis of all coding exons and flanking intronic regions of all 5 genes using Next Generation Sequencing (NGS).

Copy number changes

Multiplex Ligation-dependent Probe Amplification (MLPA) is used to look for whole-exon and multi-exon deletions and duplications in *MLH1*, *MSH2*, *MSH6* and *PMS2* (for *EPCAM*, only a subset of exons are interrogated by MLPA).

Confirmation

All suspicious variants will be confirmed by an alternative sequencing method.

Benefits of Genetic Testing

Reduction of Lynch syndrome risk: Detection of biallelic mutations in MMR gene(s) or *EPCAM* in tumor for patients with abnormal IHC and/or MSI and normal germline testing reduces the likelihood of Lynch Syndrome.

NCCN Guidelines: MMR tumor testing is recommended for patients who have had abnormal MSI and/or IHC and normal germline testing.

Develop Tailored Surveillance: Patients with no underlying Lynch germline mutation and double MMR somatic hits may require alternative or additional management and surveillance. Testing provides clinicians with additional information to better manage their patients.