**Sample IHC Normal Expression Report**

**Reason For Referral**

Possible diagnosis of Hereditary Nonpolyposis Colon Cancer (HNPCC)/Lynch syndrome. Evaluate tissue for evidence of defective DNA mismatch repair.

**Method**

Immunohistochemical staining (IHC) is used to determine the presence or absence of protein expression for one or more of the following: MLH1, MSH2, MSH6, and PMS2. Lymphocytes and normal epithelium exhibit strong nuclear staining to serve as positive internal controls for staining of these proteins.

**RESULTS**

Tumor type: colon adenocarcinoma

IHC: Normal expression of MLH1, MSH2, MSH6, and PMS2

**Interpretation**

The results of the IHC analysis suggest the presence of normal DNA mismatch repair function within the tumor. Thus, the likelihood that this individual has an inherited colon cancer syndrome due to defective DNA mismatch repair (HNPCC/Lynch syndrome) is reduced but not eliminated. These results reduce but do not completely rule out the possibility of defective DNA mismatch repair within the tumor because approximately 5% of cases with defective mismatch repair do not show absence of protein expression by IHC. These results also do not exclude the possibility that this individual's tumor is due to an inherited defect in another gene not involved in DNA mismatch repair. A significant fraction of clinically defined HNPCC cases (30% or more) do not have defective DNA mismatch repair as the underlying genetic basis of their disease. Additionally, we cannot rule out the possibility that this individual or family has HNPCC/Lynch syndrome because this tumor could represent a sporadic occurrence. If there is a strong personal or family history of HNPCC/Lynch syndrome related cancers for this individual or if this individual has multiple tumors, consider microsatellite instability (MSI) testing on this tumor or a different tumor to further evaluate the possible role of defective DNA mismatch repair for this individual or family. A genetic consultation may be of benefit.

**CAUTIONS**

Test results should be interpreted in context of clinical findings, family history, and other laboratory data. If results obtained do not match other clinical or laboratory findings, please contact the laboratory for possible interpretation. Misinterpretation of results may occur if the information provided is inaccurate or incomplete.