Effective immediately, the Allina Health Immunohistochemistry (IHC) laboratory is performing the NUT stain.

**Application**

NUT IHC has a sensitivity of 87% and specificity of 100% for NUT carcinomas. NUT FISH testing should be considered in any case that is NUT IHC negative.

**Antibody**

NUT (clone C52), IVD

**Specifications**

- NUT gene (NUTM1, NUT midline carcinoma family member 1) on chromosome 15 encodes NUT protein (nuclear protein in testis, FAM22H and NUT family member 1). Function of NUT protein is uncertain.
- NUT carcinoma is a highly aggressive malignancy defined by translocations involving the NUT gene. Fusion with partner genes (BRD4, BRD3, NSD3, and others) leads to the deregulated gene transcription of multiple genes including cMYC and TP63.

**Staining pattern**

Nuclear staining. Cytoplasmic staining is nonspecific.

- NUT carcinoma: Strong speckled nuclear staining in greater than 50% of tumor cells. Most NUT carcinomas demonstrate strong speckled staining in >90% of tumor cells.
- Majority of malignant ovarian germ cell tumors and a subset of other germ cell tumors (seminomas, embryonal carcinoma, and others) demonstrate nuclear staining in a subset of tumor cells. The nuclear staining is uniform (non-speckled) and has been reported to be weak to moderate in intensity.
- Staining in normal tissues: Germ cells of the testis and ovary demonstrate homogenous (non-speckled) nuclear staining.

*Speckled nuclear staining in NUT carcinoma*
References
5. International NUT Midline Carcinoma Tumor Registry http://www.nmcregistry.org

The Allina Health Laboratory IHC requisition will be updated to include this new stain offering.