

Cluster of Differentiation 117 (CD 117) Immunohistochemistry

Test Description

CD117 (c-kit), encoded by the proto-oncogene c-kit, is a transmembrane protein belonging to the type III subfamily of the receptor tyrosine kinases. It has extracellular, intramembranous and intracellular domains. By binding to its ligand, called stem cell factor, this molecule plays an important part in regulating cellular activities, such as apoptosis, cell differentiation, proliferation, and cell adhesion. This marker has been identified as a key oncogenic driver in a variety of solid tumors. It has been shown to play a role in the proliferation of a number of cell types, including mast cells, melanocytes, germ cells, and hematopoietic stem cells. Recently, CD 117, has been gaining popularity as a biomarker of prognosis in malignancies.

Specimen

Sample Type: FFPE block MBCL 134(T)
Site: Lung
Pathology ID: MOLQ/IHC-14042019
Disease: Adenoid Cystic Carcinoma

Interpretation

The scoring system is based on type and origin of tumor. If additional interpretation or analysis is needed, send request for Pathology Consultation.

Methodology

Immunostaining for CD 117 protein was done using Ventana Rabbit Anti-Human CD 117/ Polyclonal Antibody on Ventana Autostainer. Positive CD 117 staining/expression is defined as complete and/or partial, circumferential or linear plasma membrane staining at any intensity that can be differentiated from background.

Note

CD117 expression in NSCLC may serve as a useful marker for predicting the prognosis of patients with NSCLC. A number of complex somatic alterations that extend beyond protein kinase activity to include transcription factors, epigenetic modifiers, and splicing variants were recently reported in NSCLCs. CD117-positive NSCLC cells reportedly exhibit cancer stem cell characteristics including self-renewal and chemoresistance. The positive expression of CD117 is significantly associated with a shorter relapse-free survival rate in patients with NSCLC suggesting that CD117 may serve as a prognostic marker for predicting poor prognoses and a novel therapeutic target for patients with NSCLC.

References

1. Rosai and Ackerman's Surgical Pathology.
2. Brittni M Foster et al. (2018) 6:1.
3. Tomohiko Sakabe *et al.* (2017) 13:5.
4. Fuyou Zhao *et al.* (2014) 7:3.

Reviewed By



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Head, Pathology

Cluster of Differentiation 117 (CD 117): Negative

Microscopy Evaluation

Tumor cells: 20%

Tumor cells positive for CD 117: Negative

CD 117 IHC - Tumor

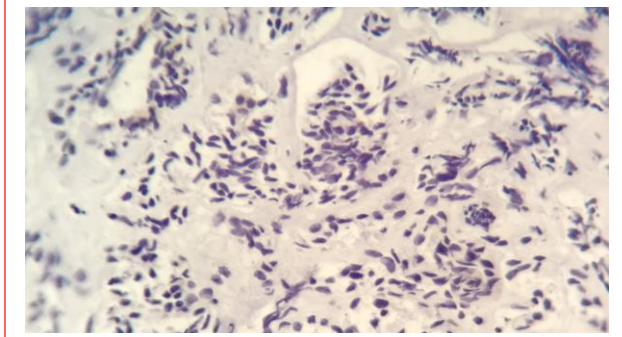


Figure 1

CD 117 IHC- Tumor Cells

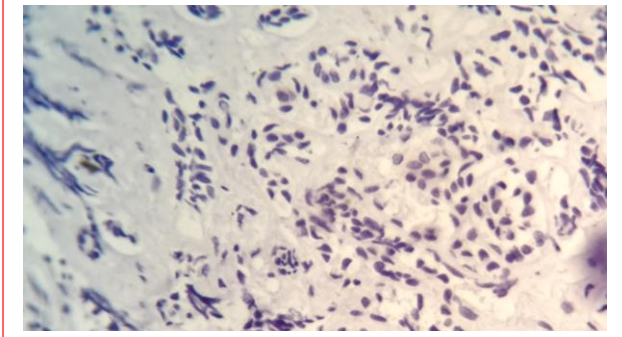


Figure 2