

p16 (INK4a/CDKN2A) Immunohistochemistry

Test Description

p16 (INK4a/CDKN2A) is a cell cycle regulatory protein that is overexpressed in cervical dysplasia related to human papilloma virus (HPV) infection. Nuclear and cytoplasmic staining is seen in dysplastic squamous cervical epithelial cells infected with HPV but not in normal cells. A subset of pancreatic islet cells and dendritic cells show expression of p16 and can serve as positive control.

Specimen

Sample Type: FFPE block MolQ/B-3589/24
Site: Right Tonsil
Pathology ID: MOLQ/IHC-004-08-24
Disease: Dysplastic lesion (Focal) suggestive of Squamous Cell Carcinoma (SCC)

Scoring

The nuclear as well as cytoplasmic expression was scored both in terms of percentage of cells stained as well as intensity of staining. Block positivity in >10 cells showing strong nuclear and cytoplasmic staining is considered positive.

Methodology

Immunostaining for p16^{INK4A} protein was done manually using Anti-p16 mouse monoclonal antibody (Clone E6H4).

Interpretation

Positive p16^{INK4A} staining/expression is defined as strong nuclear and cytoplasmic expression in a continuous segment of cells (at least 10-20 cells); in squamous epithelium, block positivity in basal and parabasal layers is also considered.

Negative p16^{INK4A} staining/expression is defined as no staining or when only cytoplasmic staining, diffuse bluish/weak intensity staining and other focal/patchy patterns are observed.

Complete absence of staining has been correlated with CDKN2A gene silencing mutations which warrants further investigation.

Note

p16^{INK4A} expression is most commonly studied and used in the evaluation of HPV associated anogenital lesions (cervical, vulvar, vaginal, anal, penile) and less frequently in the evaluation of head and neck carcinoma (specifically oropharyngeal carcinoma - tonsils, base of tongue).

References

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- Castle PE. A LASTing impression: incorporating p16 immunohistochemistry into routine diagnosis of cervical neoplasia. *Pathol Case Rev.* 2013;18: 154-157.
- Magaki S et al. An introduction to the performance of immunohistochemistry. *Methods Mol Biol.* 2019;1897: 289-298.
- Lewis Jr JS et al. p16 positive oropharyngeal squamous cell carcinoma: an entity with a favorable prognosis regardless of tumor HPV status. *Am J Surg Pathol.* 2010; 34(8):1088-96.
- Teresa M Darragh TM et al. The Lower Anogenital Squamous Terminology Standardization Project for HPV-Associated Lesions: background and consensus recommendations from the College of American Pathologists and the American Society for Colposcopy and Cervical Pathology. *Arch Pathol Lab Med.* 2012; 136(10): 1266-97.
- Schaefer IM et al. Abnormal p53 and p16 staining patterns distinguish uterine leiomyosarcoma from inflammatory myofibroblastic tumour. *Histopathology.* 2017; 70(7): 1138-1146.

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Clinician Name: Not Provided
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 Pathologist: Not Provided

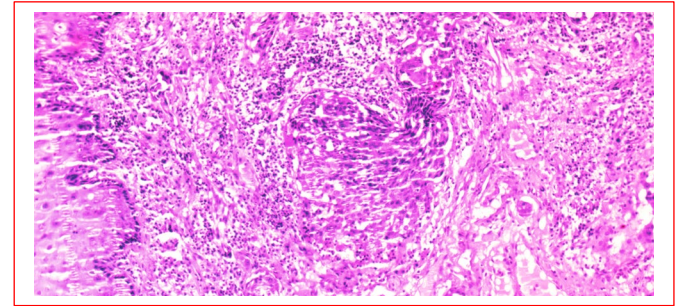
Impression

p16^{INK4A}: Negative

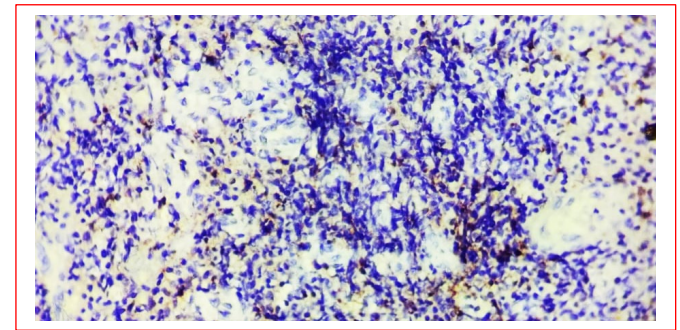
Microscopy Evaluation

Section examined showed no nuclear or cytoplasmic expression of p16 protein.

HE Stained Section:



p16 IHC



Disclaimer

- The tests are carried out in the lab with the presumption that the specimen belongs to the patient named or identified in the bill/test request form.
- The test results relate specifically to the sample received in the lab and are presumed to have been generated and transported per specific instructions given by the physicians/laboratory.
- The reported results are for information and are subject to confirmation and interpretation by the referring doctor.
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