

Human Epidermal Growth Factor Receptor 2 Immunohistochemistry

Test Description

Test is useful for determining overexpression of HER2 protein of gastric and esophageal adenocarcinoma in formalin-fixed, paraffin-embedded tissue sections (with reflex to FISH testing).

Clinical Information

Human epidermal growth factor receptor 2 (*HER2*), is a proto-oncogene located on chromosome 17q21 that encodes a transmembrane protein with tyrosine kinase activity, a member of the HER receptor family and is involved in signal transduction pathways, leading to cell growth and differentiation. Amplification and overexpression of the *HER2* gene have been associated with a shorter disease-free survival and shorter overall survival in gastric and gastroesophageal junction cancers, as well as breast, endometrial, and ovarian cancer.

Specimen

Sample Type: FFPE Block
(MOLQ B-2104/22 B)
Site: Lungs (Right lower lobe)
Pathology ID: MOLQ B- 2614/22
Disease: Metastatic Adenocarcinoma.

Scoring

The scoring system is based on type and origin of tumor.

| Score | Staining Pattern | Interpretation |
|-------|---|----------------|
| 0 | No reactivity or membranous reactivity in <10% of cancer cells | Negative |
| 1+ | Faint or barely perceptible membranous reactivity in ≥10% of cancer cells; cells are reactive only in part of their membrane. | Negative |
| 2+ | Weak to moderate complete, basolateral or lateral membranous reactivity in ≥10% of tumor cells | Equivocal |
| 3+ | Strong complete, basolateral or lateral membranous reactivity in >10% of cancer cells. | Positive |

Interpretation

Results are reported as positive (3+ HER2 protein expression), equivocal (2+), or negative (0 or 1+).

Equivocal (2+) cases will automatically reflex to FISH testing at an additional charge.

Methodology

Immunostaining for HER2 protein was done using PathnSitu Rabbit Anti-Human HER2 monoclonal (Clone EP3) antibody

References

- Rosai and Ackerman's Surgical Pathology.
- NCCN Guidelines Journal of the National Comprehensive Cancer Network 2006 4
- Reporting Results of *HER2 (ERBB2)* Biomarker Testing of Specimens from Patients with Adenocarcinoma of the Stomach or Gastroesophageal Junction Angela N. Bartley Gastric HER2 Biomarkers (CAP)
- Brandon S *et al.* HER2/neu Testing in Gastric Cancer by Immunohistochemistry. Arch Pathol Lab Med 2014 138
- Ramin Azarhoosh *et al.* HER2/neu gene amplification in gastric adenocarcinoma and its relationship with clinical and pathological findings. J Gastrointest Oncol. 2017 8:6

Human Epidermal Growth Factor Receptor 2 (HER2/neu): (Score 3)

Microscopy Evaluation

HE Staining (Figure 1)

Tumor cells: 74 %

Her2/neu by IHC: Score 3+ (Figure 2)

HE Stained Section

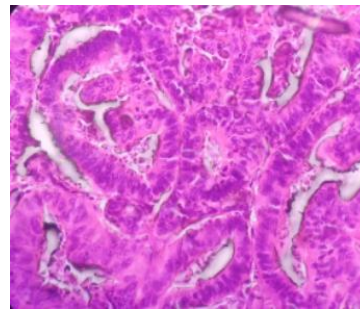


Figure 1

HER2/Neu IHC- Tumor

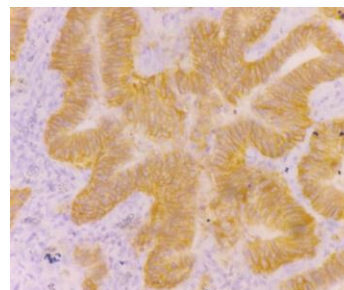


Figure 2

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