

## 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 S-882/18  
**Site:** Esophagus  
**Pathology ID:** MOLQ/IHC-16042019  
**Disease:** Moderately Differentiated Squamous Cell Carcinoma

### Scoring

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

Score	Staining Pattern	Interpretation
0	No staining or <10% of cells	Negative
1+	Faint incomplete staining of cell membrane in >10% of Tumor cells.	Negative
2+	Weak to moderate complete staining of cell membrane >10% of Tumor cells.	Weak Positive/ Equivocal
3+	Strong complete staining of cell membrane in >10% of Tumor cells.	Strong 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 (#PR047)

### References

- Rosai and Ackerman's Surgical Pathology.
- NCCN Guidelines Journal of the National Comprehensive Cancer Network 2006 4
- Ruschoff J, Diel M, Baretton G, et al. HER2 diagnostics in gastric cancer guideline validation and development of standardized immunohistochemical testing. *Virchows Arch. Sep; 457 (3):299-307*
- 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): Negative (Score 0)

### Microscopy Evaluation

#### HE Staining (Figure 1)

Tumor cells: 40%

#### Her2/neu by IHC: Negative (Score 0)

Percentage of cells with uniform membrane staining: 00% (Figure 2)

### HE Stained Section

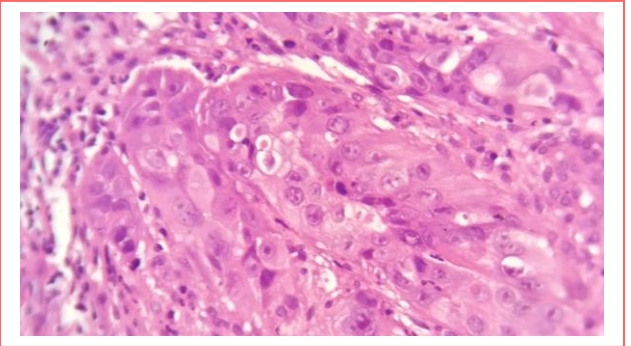


Figure 1

### HER2/Neu IHC- Tumor

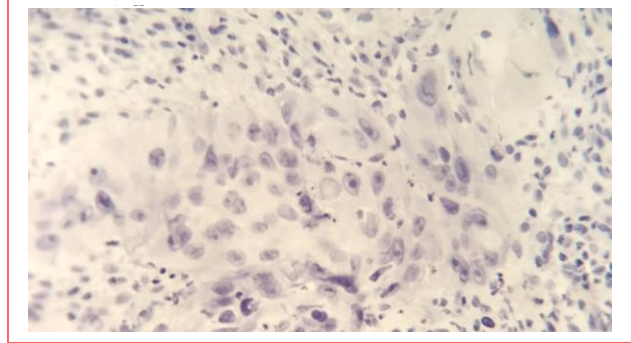


Figure 2

### Reviewed By



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