

- 4) Goldsmith JD, Troxell M, Roy-Chowdhuri S, et al. Principles of analytic validation of immunohistochemical assays: guideline update. *Arch Pathol Lab Med*. 2024. <https://doi.org/10.5858/arpa.2023-0483-CP>

## ANP.22979 Estrogen Receptor and HER2 Testing in Breast Cancer Samples

Phase I



**At least one tumor sample from all patients with invasive breast cancer (newly diagnosed, recurrent, or metastatic disease) is tested for estrogen receptors and HER2 (by IHC or ISH) if tissue is available.**

### REFERENCES

- 1) Wolff AC, Somerfield MR, Dowsett M, et al. Human Epidermal Growth Factor Receptor 2 Testing in Breast Cancer: American Society of Clinical Oncology/College of American Pathologist Guideline Update. *Arch Pathol Lab Med*. Published online June 7, 2023. doi: 10.5858/arpa.2023-0905-SA

## ANP.22983 Fixation - HER2 and ER Breast Cancer Predictive Marker Testing

Phase I



**If the laboratory assesses HER2 protein over-expression by immunohistochemistry, HER2 (ERBB2) gene amplification by in situ hybridization, or estrogen receptor expression by immunohistochemistry for breast cancer predictive marker testing, the laboratory monitors cold ischemia time (one hour or less) and appropriate specimen fixation time.**

*NOTE: The CAP strongly recommends that specimens subject to these tests be fixed in 10% neutral buffered formalin for at least six hours and up to 72 hours at room temperature. Specimens must be fully submerged in the optimal volume of formalin to achieve a formalin to specimen volume of 10:1 or higher, or if not feasible (eg, large specimens) at least 4:1. For cases with negative HER2 results by IHC that were fixed outside these limits, confirmatory analysis by in-situ hybridization is strongly recommended.*

*Laboratories must communicate the following fixation guidelines to clinical services:*

1. *Rapid immersion of specimens in fixative is critical, and must occur within one hour of the biopsy or resection*
2. *If delivery of a resection specimen to the pathology department is delayed (eg, specimens from remote sites), the tumor must be bisected prior to immersion in fixative. In such cases, it is important that the surgeon ensure that the identity of the resection margins is retained in the bisected specimen; alternatively, the margins may be separately submitted.*

*Both the time of removal of the tissue and the time of immersion of the tissue in fixative must be recorded and communicated from the submitting service to the processing laboratory.*

*Communication to clinical services of the need for appropriate information on cold ischemia time, fixative, and fixation time may be through memoranda, website, phone, face-to-face meetings, or other means. Information about fixative, fixation time, and cold ischemia time for each specimen must be recorded as part of the permanent specimen record in the pathology report. The laboratory must monitor for compliance and take corrective action as needed.*

***If specimens are fixed in a solution other than 10% neutral buffered formalin, the laboratory must perform a validation study showing that HER2 and ER results are concordant with results from formalin-fixed tissues.***

*Laboratories testing specimens obtained from another institution must have a policy that addresses cold ischemia time and time of fixation. Information on time of fixation may be obtained by appropriate questions on the laboratory's requisition form. If specimens have undergone any deviation from processing that may interfere with result interpretation, such as the use of specimens that previously were used for frozen section diagnosis, this must be annotated on the final report.*

### Evidence of Compliance:

- ✓ Records of communication of cold ischemia and fixation guidelines to clinical services **AND**
- ✓ Records of action taken when cold ischemia and fixation times are consistently outside of required parameters or are not available to the laboratory

### REFERENCES