

### SAMPLE MOLECULAR (FISH) REPORT

#### DIAGNOSIS:

#### ABC hospital A07-44444 (Block A)

Right axillary mass, excision: Metastatic carcinoma of breast origin, **positive** for amplification of HER2 gene by fluorescence in situ hybridization (FISH) using morphometric analysis by MetaSystems™.

#### COMMENTS:

HER2 testing by FISH is performed in compliance with the ASCO-CAP Guidelines (Wolff AC et al., J Clin Oncol 25:118-45, 2007). *Test Validation* : The FISH method employed has been modified from the FDA-approved method employing HER2 and CEP17 fluorescent labeled probes (Vysis®, Chicago, IL), and uses morphometric image analysis (MetaSystems™, Altussheim, Germany). This laboratory takes responsibility for the test performance, which has been documented to yield extremely high concordance levels between immunohistochemistry (IHC) and FISH (Yaziji H et al., JAMA 291:1972-7, 2004, and Gown AM et al., Breast Cancer Res Treatment 100:S218, 2006). In the latter study of 6104 patients, a 99.1% concordance was demonstrated between negative (0 or 1+) HER2 IHC and nonamplified HER2 FISH, and a 94.3% concordance was demonstrated between positive (3+) HER-2 IHC and amplified HER2 FISH. *FISH Scoring*: Results are scored as positive (HER2:CEP17 ratio > 2.2), negative (HER-2:CEP17 ratio <1.8), or equivocal for amplification (HER2:CEP17 ratio ≥ 1.8 and ≤ 2.2), according to the ASCO-CAP Guidelines. In cases scored as equivocal for amplification using morphometric image analysis, manual counting is performed and, if results are still equivocal, reflexive IHC will be performed. *Quality Assurance*: PhenoPath Laboratories has in place a quality assurance program, which includes daily case review and the ongoing concordance studies between IHC and FISH, to ensure high levels of interobserver and methodology concordance.

#### SPECIMEN INFORMATION:

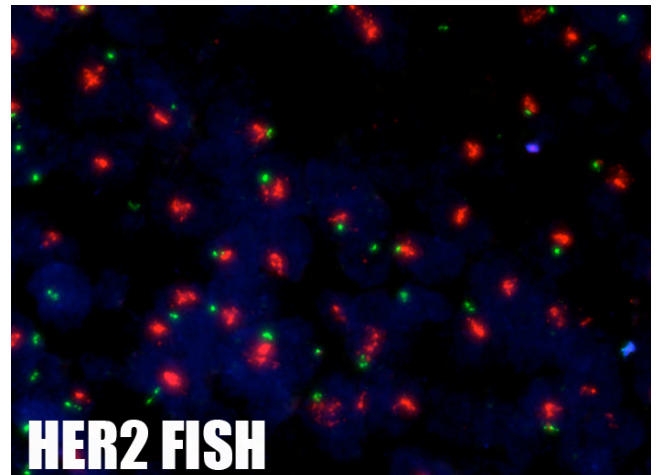
A1 = A07-44444, A, 1 block

#### RECEIVED FOR THE FOLLOWING:

HER2 by FISH

#### FLUORESCENCE IN SITU HYBRIDIZATION FINDINGS:

Deparaffinized sections of tissue, following digestion and pretreatment of the tissue, and along with appropriate positive and negative controls, are incubated with the PathVysion™ detection system (an FDA approved in vitro diagnostic test) containing 2 separate probes: a locus-specific HER2 probe (17q11.2-q12 -- LSI HER2 SpectrumOrange) and a chromosome 17-centromere probe (17q11.1-q11.1--CEP17 SpectrumGreen). Morphometric analysis is performed using a MetaSystems™ image analysis system and Metafer 4 application software. The number of HER2 and CEP17 signals is counted per tile/cell, and the HER2:CEP-17 ratio is calculated.



**HER2 to CEP-17 ratio = 12.7**  
**Positive**

Block A (Surgery Date: 01/05/2007) - Axillary mass, right (PP2007XXXXX A1)

DNA Target	Probe	Mean # of signals
HER2	LSI-HER2/SpectrumOrange	21.2 signals
Chromosome 17-centromere	CEP 17-SpectrumGreen	1.7 signals

#### \*\*\*ELECTRONICALLY SIGNED\*\*\*

**Allen M. Gown, M.D.**  
Pathologist

In compliance with CMS regulations, the pathologist's signature on this report indicates that the case has been personally reviewed, and the diagnosis made or confirmed by the Pathologist.

NOTE: Some of the tests reported here may have been developed and performance characteristics determined by PhenoPath Laboratories. They have not been cleared or approved by the U.S. Food and Drug Administration (FDA). However, the FDA has determined that such clearance or approval is not necessary. Pursuant to the requirements of CLIA, this laboratory has established and verified the accuracy and precision of all tests, and additional information about these tests is available upon request. PhenoPath Laboratories is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity clinical laboratory testing.