SPRING STREET LABORATORIES
NEW YORK

PATHOLOGY REPORT

Patient: Mott, Elizabeth
DOB: 08/29/1960
Age/Sex: 57/F

MRN: 34298347
Acct: 23409384

Attending Provider: John H Wilson MD

Date Collected: 04/12/2018

Pathology Specimen S18-349833

Immunohistochemistry Results

FINAL DIAGNOSIS

A: Left breast 12 o'clock, 1 cm from nipple, needle core biopsy:
Invasive carcinoma with the following features:
Histologic type: Ductal, not otherwise specified
Histologic grade (Nottingham histologic score): High, 3 of 3, (score 9 of 9).
Tubule Formation: Poor, 3 of 3.
Nuclear grade: High, 3 of 3.
Mitotic rate: High, 3 of 3.
Lymph-vascular invasion: Suspicious.
Ductal carcinoma in situ (DCIS): Absent.
Additional Findings:
ER: 98% positive, variable weak to moderate to strong nuclear staining.
PR: 2% positive, weak to moderate nuclear staining.

B: Left axilla, needle core biopsy:
Invasive ductal carcinoma.

CLINICAL INFORMATION
A - left breast ultrasound-guided needle core biopsy at 12 o'clock 1 cm from nipple. The specimen was put into formation at 09:26 a.m. on 04/12/2018, this will have a total time in formalin of 11 hours and 26 minutes. B - left axilla ultrasound-guided biopsy. The specimen was put into formalin at 09:42 a.m. on 04/12/2018, this will have a total time in formalin of 11 hours and 10 minutes.
ICD Code(s): N63.20, R59.9.

GROSS DESCRIPTION
A: Received in formalin, labeled "Elizabeth Mott", "Lt 12 o'clock N+1", are four 0.2 cm in diameter and ranging in length from 1.2-1.7 cm portions of fibroadipose tissue. The specimen is entirely submitted in A1.

B: Received in formalin, labeled "Elizabeth Mott", "Lt axilla", are three 0.1 cm in diameter and ranging in length from 0.7-1.4 cm portions of fibroadipose tissue. The specimen is entirely submitted in B1. Received on 04/12/2018 are two alcohol-fixed, direct smears and two air-dried direct smears labeled "E Mott" "B: Left axilla". The alcohol-fixed smears are Papanicolaou stained, and the air-dried smears are Wright stained. (rc)

IMMUNOHISTOCHEMISTRY STUDY

Methodology: Formalin-fixed, paraffin embedded tissue and appropriate positive and negative controls are visualized using a polymer-based detection system. Unless otherwise noted, all controls were reviewed and met expectations. Results are outlined below:
Source: Block A1
Population: Cells of interest

Antibody	Result	Comment
E-Cadherin	Positive	ductal phenotype.

P120 CAT (DAB)	Positive	ductal phenotype.

Interpreted By: Yoonjung Yang MD
Comment:

These immunohistochemical tests were developed and performance characteristics determined by Spring Street Laboratories. They have not been cleared or approved by the U.S. Food and Drug Administration. The FDA does not require this test to go through premarket FDA review. These tests may be used for clinical purposes. They should not be regarded as investigational or for research use only. Spring Street Laboratories is certified under the Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high complexity clinical laboratory testing.

IMMUNOHISTOCHEMISTRY STUDY

Methodology: Immunohistochemistry studies for estrogen and progesterone (ER/PR) receptors (using rabbit monoclonal antibody clone SP1 for ER from Ventana and mouse monoclonal antibody clone 16 for PR from Leica) are carried out on formalin fixed and paraffin embedded tissue sections. Positive and negative controls show appropriate reactivity. Determination of ER/PR reactivity is based on manual estimation of the percentage of positive nuclei in tumor cells. Results are as follows:

Source: Block A1
Population: Cells of interest

Antibody	Result	Comment
ERsq	98% of tumor cells positive	Variable weak to moderate to strong nuclear staining
PRsq	2% of tumor cells positive	Weak to moderate nuclear staining

Interpreted By: Yoonjung Yang MD
Comment:

Some immunohistochemistry studies have suggested that as few as 1% positive tumor cells for ER/PR may correlate with a significantly improved clinical response of patients to therapeutic and adjuvant hormonal therapy. Based on this information, tumors showing 1% or greater of tumor cell nuclear staining for ER/PR may be considered positive.

These immunohistochemical tests were developed and performance characteristics determined by Spring Street Laboratories. They have not been cleared or approved by the U.S. Food and Drug Administration. The FDA does not require this test to go through premarket FDA review. These tests may be used for clinical purposes. They should not be regarded as investigational or for research use only. Spring Street Laboratories is certified under the Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high complexity clinical laboratory testing.

ADDENDUM #1

IMMUNOHISTOCHEMISTRY STUDY

Testing performed by Spring Street Laboratories, New York, NY 10013
SS2018-34383-01, issued 04/13/2018 interpreted by Yoonjung Yang M.D.

Result (A1): Left breast at 12 o'clock: Invasive ductal carcinoma.

Antibodies to [Clone]	Result
HER2[4B5]	**EQUIVOCAL (2+)**

Comment: This tumor shows a 2+ level of immunostaining (IHC) which, according to the 2013 revised ASCO-CAP Guidelines (Wolff AC et al., J Clin Oncol 31:3997-4013, 2013), puts it in the category of "equivocal" HER2 status by IHC.

Please refer to the Spring Street Laboratories report (SS2018-34383-01) for a complete description of the results and further details. A copy will be retained in the patient's record. If you would like to receive a copy of this report, please contact us at 866-348-3493.

Yoonjung Yang, MD. Electronically signed 04/13/2018 10:22