

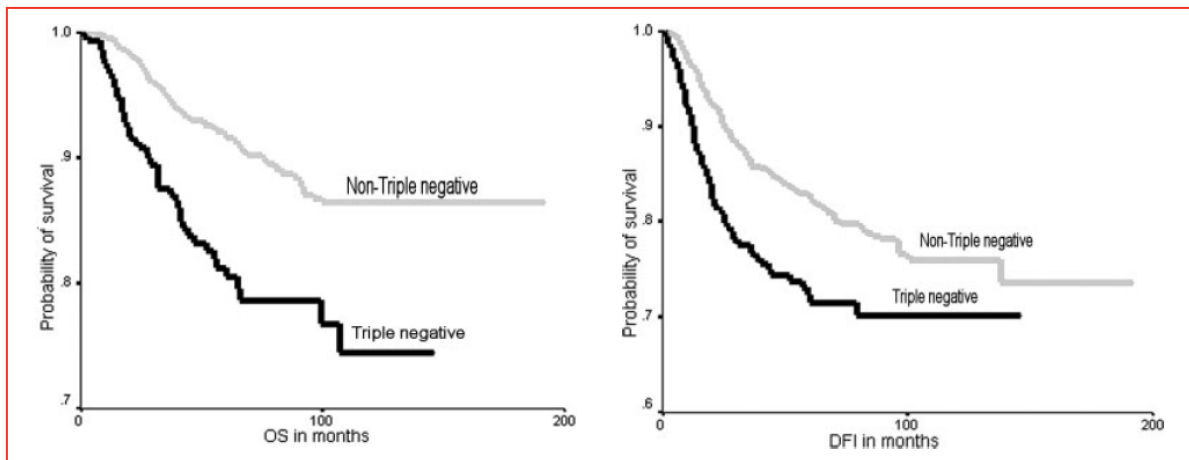
For Patients with Triple-Negative Breast Cancer...

- Estrogen receptor-negative
- Progesterone receptor-negative
- HER2-negative

DIAGNOSIS DEFINED

Triple-negative breast cancer (ER-, PR-, HER2 negative) is a high risk cancer that lacks the benefit of specific therapy targeting the hormone receptors and HER2. Recent findings indicate that 16-25% of breast cancers are of Triple-Negative phenotype. DNA microarray and Immunohistochemistry (IHC) analyses indicate that 56% of triple-negative-tumors are basal-like and have a clinical behavior similar to basal-like.ⁱ

Triple-Negative Breast Cancer: Correlations with OS and DFIⁱⁱ



Correlation between triple-negative phenotype and overall survival (OS).

Correlation between triple-negative phenotype and disease-free interval (DFI).

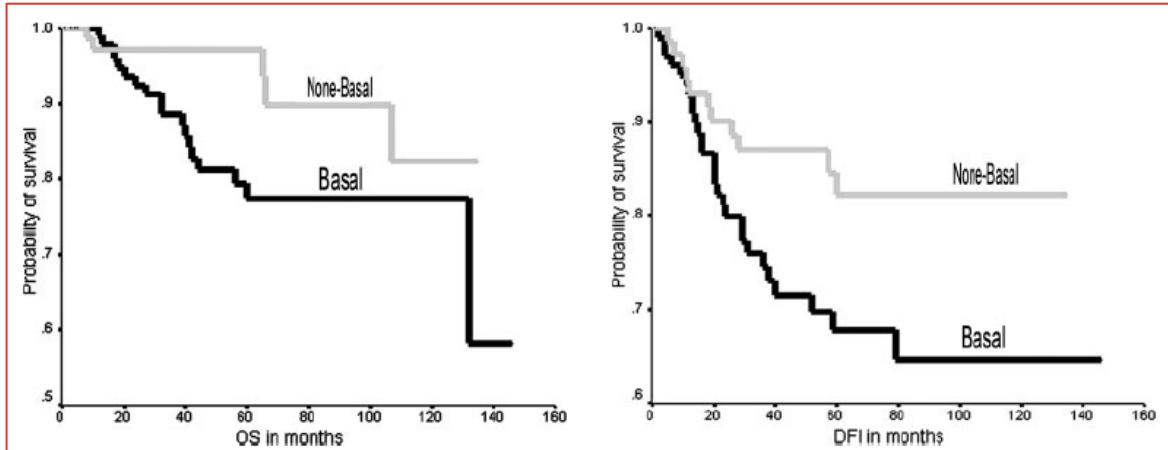
Applied Diagnostics now offers a **Triple-Negative Breast Panel** test for the following markers by Immunohistochemistry:

Triple-Negative Breast Panel – IHC Markers	
• Androgen Receptor	• CK 5/6
• EGFR	• CK 14
• P-Cadherin	• P53
• E-Cadherin	• Ki67

The Triple-Negative Breast Panel Test results aid oncologists in identifying a subset of patients who could benefit from a more aggressive therapeutic intervention. These patients are defined by the expression of the protein markers included in the Triple-Negative Panel Test matrix above.



Basal Phenotype: Correlation with OS and DFI in Lymph Node-Negative Subgroup of Breast Cancer Patientsⁱⁱⁱ



Correlation between basal phenotype and overall survival (OS) in the lymph node-negative subgroup of triple-negative tumors

Correlation between basal phenotype and disease free interval (DFI) in the lymph node-negative subgroup of triple-negative tumors

Prognostic Markers for Triple- Negative Tumors

- Absence of **Androgen Receptor (AR)** expression is found to be associated with higher histological grade, development of recurrence and distant metastasis.
- Basal phenotype defined by the expression of **cytokeratin - CK 5/6 or CK 14** is found to be associated with development of recurrence and increased mortality from breast cancer.
- Negative expression of **E-Cadherin** is found to be associated with higher histological grade and development of metastasis.
- Positive expression of **P-Cadherin, p53** and **Ki67** are associated with higher grade.
- **Epidermal Growth Factor Receptor (EGFR)** expression is associated with poor prognosis in several types of tumors including breast.

Patients who underwent evaluation for these biomarkers and were identified as candidates for a more aggressive therapeutic intervention, experienced improved overall survival (OS) and disease free interval (DFI) when treated with chemotherapy.

Specimen Requirement: Formalin-fixed paraffin embedded tissue

i Rakha, Emad A., El-Sayed, Maysa E., Grenn, Andrew R., Lee, Andrew H. S., Robertson, John F., & Ellis, Ian O. (2007). Prognostic markers in triple-negative breast cancer. *Cancer*, 2007; 109, 25-32.

ii Ibid

iii Ibid