TEMPUS | ONCOLOGY

The value of longitudinal ESR1 testing in metastatic breast cancer

ctDNA monitoring enables early detection of resistance to guide proactive, personalized treatment decisions.

Identify resistance as it emerges

~40%

of patients with HR+, HER2-negative metastatic breast cancer treated with aromatase inhibitors (AIs) develop ESR1 mutations over time.[1]

Detect mechanisms of resistance before radiographic progression

Recent studies show that ESR1 mutations can be detected in circulating tumor DNA (ctDNA) **months before radiographic progression**.[2]

Insights to inform timely treatment decisions

Using a ctDNA-guided approach was associated with a **56% reduction in the risk of disease progression** with early ESR1 detection.[2]

xF/xF+ supports monitoring resistance alterations as they emerge, guiding treatment when it matters most.

- High-sensitivity, broad-panel ctDNA testing
- Results in just 5–7 days from a single blood draw
- Easy-to-interpret reports track ctDNA levels and variant changes over time
- One financial assistance program, supporting medically necessary testing for qualified patients over time

1 Chaudhary N, Chibly AM, Collier A, et al. CDK4/6i-treated HR+/HER2– breast cancer tumors show higher ESR1 mutation prevalence and a more altered genomic landscape. *NPJ Breast Cancer*. 2024;10:15.

2 Bidard FC, Mayer EL, Park YH, et al. First-Line Camizestrant for Emerging ESR1 -Mutated Advanced Breast Cancer. *NEJM*. Published online June 2025.

Longitudinal testing with xF+ detected an emerging ESR1 mutation, enabling personalized treatment.

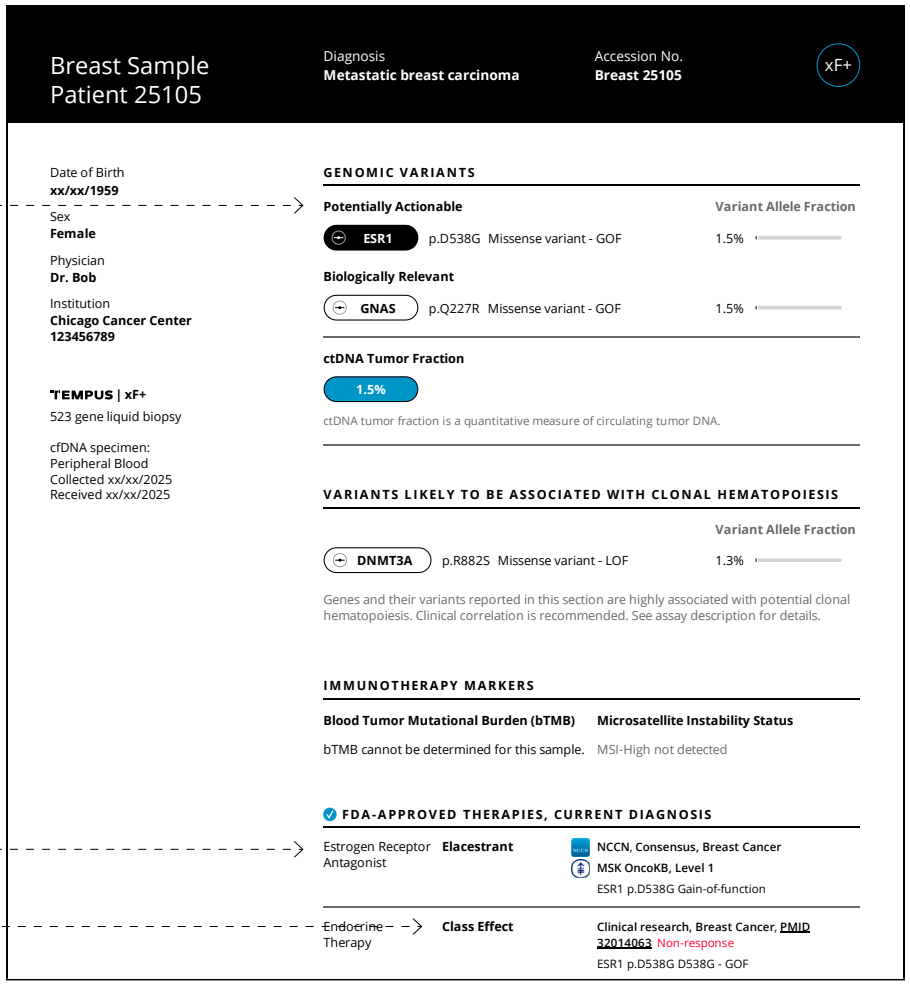
The patient received four xF+ tests between January 2024 and May 2025 as part of ongoing ctDNA monitoring.

Fourth xF+ test in May 2025:

An ESR1 mutation emerged on later xF+ tests that was not present in the initial report. Early detection of ESR1 mutations allows for proactive treatment switches to potentially delay or prevent clinical progression before it appears radiographically.

Due to the newly detected ESR1 alteration, Elacestrant, an FDA-approved targeted therapy, was identified as a treatment option.

ESR1 mutations are associated with a unique transcriptional profile that promotes resistance to endocrine therapies. This suggests a limited response to additional endocrine treatments, emphasizing the need to explore alternative, targeted therapies like Elacestrant.



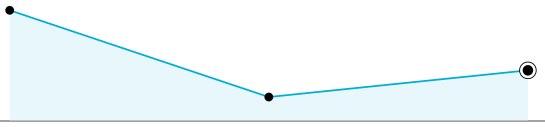
For patients that receive longitudinal testing, Tempus provides a visual summary of ctDNA tumor fraction and variant evolution over time. This feature enables providers to easily monitor disease progression and identify new resistance markers as they emerge.

LONGITUDINAL DATA

This longitudinal summary includes information from certain of the patient's xF test reports. It is presented for convenience, but it may not be current or comprehensive and it is not intended to replace each test report in the patient's medical record. Please refer to patient's past clinical reports for complete information.

Previous Tempus test results are available to review in the online portal. If you do not have access to a test report included in this summary, you may request that report by contacting support@tempus.com.

SAMPLE COLLECTION DATE	JAN 2024	JUN 2024	DEC 2024	MAY 2025
ctDNA Tumor Fraction	*data not available*	**3.3%**	**0.7%**	**1.5%**



Variant Information (Variant Allele Fraction)

SAMPLE COLLECTION DATE	JAN 26, 2024	JUN 10, 2024	DEC 6, 2024	MAY 5, 2025
GNAS p.Q227R	0.5%	0.6%	1.0%	1.5%
ESR1 p.D538G	*not detected*	5.6%	0.1%	1.5%
ESR1 p.Y537N	*not detected*	0.6%	*not detected*	*not detected*
DNMT3A p.R882S	*not tested*	*not tested*	*not detected*	1.3%