

Harnessing the Power of Precision Medicine in Cancer Treatment

Ovarian cancer is still one of the deadliest cancers affecting women. But a new companion diagnostic is helping to change the landscape.

Cancer remains one of our greatest healthcare challenges — an estimated 618,120 people died from some form of the disease in 2025 alone. New treatments offer hope — but only if patients can be matched to an effective treatment efficiently.

That's why precision medicine, with the use of companion diagnostics (CDx), is crucial. "Precision medicine aims to match the therapeutic drug to patients who will most likely benefit," explained Karina Kulangara, Ph.D., associate vice president of research and development for companion diagnostics at Agilent Technologies. "Companion diagnostics maximize benefits for patients likely to respond to the drug, and reduce the risk for adverse side effects for patients negative for the biomarker and not eligible for the drug."

The deadliest cancer

One area where companion diagnostics are making a powerful impact is ovarian cancer, which ranks fifth in cancer deaths among American women.

Agilent has developed the first CDx, PD-L1 IHC 22C3 pharmDx assay, approved for selecting ovarian cancer patients that would benefit from treatment with an immunotherapy. This test detects the programmed death-ligand 1 (PD-L1) protein, which — when binding to the molecule PD-1 — suppresses the body's immune response to tumors. If this protein is detected, immunotherapy drugs like KEYTRUDA® (pembrolizumab) can block this mechanism so the body's natural defenses can work against the disease.

"It is a very exciting approval," noted Rita Shakhovich, M.D., Ph.D., chief medical officer at Agilent Technologies. "It was based on the KEYNOTE-B96 trial, which showed improved

progression-free survival and overall survival in patients with platinum-resistant ovarian cancer — that's why it's such a meaningful advance. These patients will have better clinical outcomes and better quality of life due to this immunotherapy."

Precision oncology

The impact of the PD-L1 IHC 22C3 pharmDx assay goes beyond ovarian cancer. "It was first approved back in 2015 for non-small cell lung cancer (NSCLC)," Dr. Kulangara noted.

"Subsequently, there were approvals for head and neck squamous cell carcinoma, triple negative breast carcinoma, esophageal and GEJ carcinoma, esophageal squamous cell carcinoma, cervical gastric or GEJ adenocarcinoma — and now ovarian cancer."

These tests are accurate, reliable, and accessible thanks to staining platforms developed by Agilent. The latest, Agilent's Dako Omnis staining platform, is designed for wide accessibility and quick answers. "This is a full solution," Dr. Kulangara said. "It's high-throughput and fully automated, making it very efficient."

Partnerships

Agilent's ability to develop powerful companion diagnostics is due to robust partnerships with pharmaceutical companies and its deep assay development expertise.

"We try to understand exactly what needs they have, what patient population they're looking at, what instrument, what type of data is required for validation," Dr. Kulangara explained. "And we have strong regulatory expertise in different geographies."

That expertise and experience generate something crucial: trust, which



Dr. Shakhovich calls Agilent's "secret sauce." "If you're working on a highly critical, complex program, you need a trusted partner who has actually done this work in the past," she said. "That's why pharmaceutical companies come back over and over again to work with Agilent."

The benefit to patients remains Agilent's primary motivation. "Agilent ensures precision medicine is not just innovative, but also accessible, reliable, and clinically impactful," Dr. Shakhovich said. "What that means for patients is faster diagnosis, more accurate therapy selection, improved outcomes — and broader access to life-saving treatments."

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For more information about Agilent's companion diagnostics, scan the QR code, or visit Agilent at booth 34151 at the 2026 ASCO Annual Meeting.



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