Unlocking the Secrets of Treating Aggressive Cancers

Find out what important new treatments are being tested in late-stage human trials for treating aggressive cancers.

AUSTIN, TEXAS, UNITED STATES, August 8, 2024 /EINPresswire.com/ -- New “Liquid Biopsy” Blood Test Could Detect the Presence of Cancer Much Sooner than Conventional Biopsies

When you hear of blood tests screening for the presence of serious diseases, such as cancer, you may be reminded of the now discredited claims by Theranos, a company led by Elizabeth Holmes who is now serving 11 years for securities fraud.

But the underlying concept may yet prove viable.

> “Recent studies of targeted methylation-based liquid biopsy cancer tests found they produce too many false positives, which could lead to unnecessary surgical biopsies to rule out a cancer diagnosis.”
>
> *Formaspace*

Next-generation “liquid biopsy” technologies that can identify the fragments of circulating tumor DNA (ctDNA) in blood plasma could become a new screening technique for identifying several types of cancers.

One of the primary challenges is that early-stage cancers only produce very miniscule amounts of ctDNA.

Researchers are working on how to make these ctDNA detection tests more sensitive so they can deploy a universal multi-cancer early detection (MCED) test.

False positives remain a problem.

Recent studies of targeted methylation-based liquid biopsy cancer tests found they produce too many false positives, which could lead to unnecessary, costly, and painful surgical biopsies to rule out a cancer diagnosis.

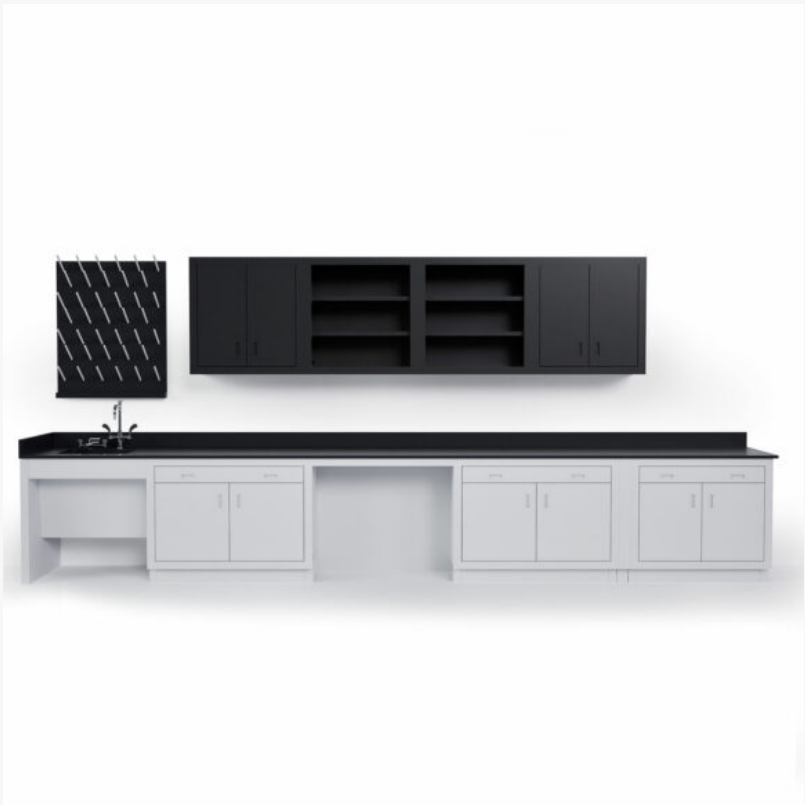
A solution to this problem may be to combine blood tests with other non-invasive tests, such as urine samples (for bladder cancer) or breast milk (for breast cancer).

Ultimately, if these cancer detection techniques could become more accurate, it could help patients get cancer treatment earlier (known as "stage shift"), which could lead to better health outcomes.

New Strategies to Treat Aggressive, Chemotherapy-Resistant Glioblastoma Brain Cancers

Glioblastoma is the most aggressive brain cancer.

High-profile patients who succumbed to the disease include Senators John McCain and Ted Kennedy, as well as President Biden's son, Beau.



Unlike other cancers, patients diagnosed with Glioblastoma (which affects men more than women) often fail to respond to conventional chemotherapy using the drug temozolomide.

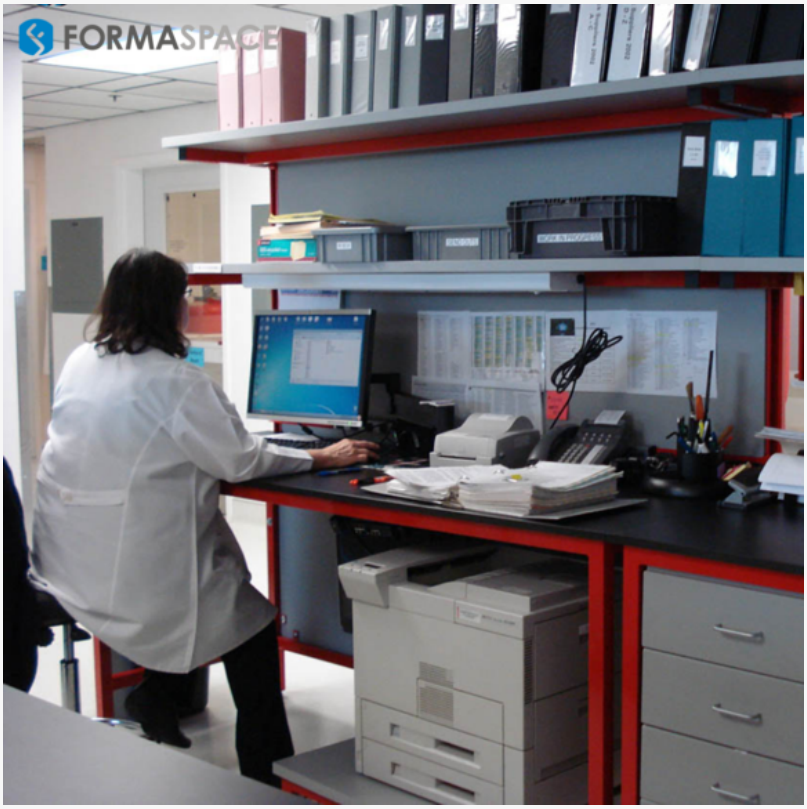
The Role of Phosphatidylinositol 3-kinase Beta

New research by a team led by Zhi Sheng at Virginia Tech's Fralin Biomedical Research Institute may have identified the issue.

Using brain cultures in the lab, Sheng's team found that blocking the Beta variant of the Phosphoinositide 3 Kinase (PI3K) molecule (which provides a cell signaling pathway in the brain) reduced resistance to the temozolomide chemotherapy drug, which blocks the growth of cancer cells.

The reason why phosphatidylinositol 3-kinase beta regulates the efficacy of temozolomide (unlike the non-beta variant) is unknown, but Sheng's team is already working to understand this relationship.

If workable clinical therapies can be developed based on these insights, patients with Glioblastoma may have new important treatment options in the future.



Your Formaspace sales representative or strategic dealer partner can help you specify customized furniture options that match your exact requirements. Shown above is a laboratory solution that features maximum storage in a small space.

New Drug Options for Treating Aggressive Lung Cancers

The cancer chemotherapy drug Temozolomide is also in the news for treating aggressive lung cancers – which are the leading cause of cancer deaths worldwide.

Recent studies have shown great promise in treating non-small cell lung cancer (NSCLC) patients by combining Temozolomide either with Lorlatinib – an ALK tyrosine kinase inhibitor (TKI) – or with Osimertinib – an epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor (TKI).

How do these tyrosine kinase inhibitors (TKIs) help make Temozolomide more effective in treating lung cancers?

Lorlatinib
Lorlatinib appears to block some of the enzymes that tumor cells need for cell growth, effectively slowing down the overall tumor growth.

The results of a Phase 3 human trial published in the Journal of Clinical Oncology by lead author Benjamin J. Solomon of the Peter MacCallum Cancer Centre in Melbourne, Australia, found that 60% of non-small cell lung cancer patients treated with Lorlatinib survived 5 years with no disease progression (compared to 8% taking the conventional crizotinib treatment).

Based on these results, the FDA has approved lorlatinib for patients with metastatic ALK-positive NSCLC.

Osimertinib
Osimertinib appears to work more indirectly in treating lung cancer for those who have a specific gene mutation in the epidermal growth factor receptor (EGFR). This gene mutation is associated with 25% of cases globally and as many as 40% of cases in Asia.

Osimertinib binds to the malfunctioning (e.g. mutant) epidermal growth factor receptors (EGFRs) that regulate cell growth. Once the Osimertinib binds to the EGFR, it slows down cancer cell growth activity.

According to a Phase 3 double-blind human trial published in the New England Journal of Medicine by Masahiro Tsuboi of Japan's Department of Thoracic Oncology and Roy S. Herbst of the Yale School of Medicine, administering a daily Osimertinib pill after lung cancer surgery reduced the risk of dying by 51%.

New Drug Therapies for Aggressive Melanoma Skin Cancers Show Promise

Two different approaches for treating aggressive melanoma skin cancers are being tested.

Read more...

Julia Solodovnikova
Formaspace
+1 800-251-1505
email us here
Visit us on social media:
Facebook
X
LinkedIn
