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Game-changing Cancer-killing molecule unveiled by scientists; targets tumors, spares healthy cells

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Game-changing Cancer-killing molecule unveiled by scientists; targets tumors, spares healthy cells
The Feed
In a groundbreaking discovery, scientists at the City of Hope, a leading cancer research institute in the US, have developed a game-changing cancer-killing molecule.

A remarkable breakthrough in cancer research has given hope to millions as scientists at the City of Hope, a leading cancer research and treatment institute in the US, unveil a game-changing cancer-killing molecule. The revolutionary pill targets and annihilates all solid cancer tumors while leaving healthy cells unharmed, making it a potential "holy grail" in cancer therapy.

Targeting the Proliferating Cell Nuclear Antigen (PCNA) Protein

The City of Hope team's groundbreaking discovery revolves around the proliferating cell nuclear antigen (PCNA) protein, that plays a crucial role in DNA replication and repair in expanding tumors. The mutated form of PCNA has long been deemed challenging to target for therapy, but the researchers have achieved the unimaginable - developing the molecule AOH1996, which effectively targets and kills the mutated PCNA, shutting down cancer cells.

Years of Research and Development - A Tribute to Anna Olivia Healey

This groundbreaking therapy is the culmination of two decades of dedicated research and development. Named after Anna Olivia Healey (AOH), a young girl born in 1996 who tragically lost her battle with cancer, AOH1996 is a testament to the perseverance of scientists in their quest to find a breakthrough treatment for this relentless disease.

Unique Mechanism of Action - Selectively Killing Cancer Cells

Unlike most targeted therapies that focus on a single pathway, AOH1996 is like a "snowstorm" that selectively shuts down cancer cells, leaving the rest of the body unharmed. The researchers found that the molecule disrupts the normal cell reproductive cycle, preventing cells with damaged DNA from dividing and replicating faulty DNA, leading to cancer cell death.

Promising Preclinical Research and Human Trials

The research has shown promising results in preclinical studies, effectively treating cells derived from various cancer types, including breast, prostate, brain, ovarian, cervical, skin, and lung cancers. AOH1996 has been found to suppress tumor growth without causing toxicity, both as a monotherapy and in combination treatment in cell and animal models.

Tackling the 'Undruggable' Protein Target

The success of AOH1996 marks a significant milestone in cancer research, as PCNA was once considered an "undruggable" protein target. City of Hope's researchers have paved the way for potential personalized and targeted cancer medicines by overcoming this challenge and developing an investigational drug.

Exciting Potential for Combination Therapies

Further experimentation has revealed that AOH1996 enhances cancer cells' susceptibility to chemical agents that cause DNA or chromosome damage, making it a promising candidate for combination therapies and new chemotherapeutics. The Phase 1 clinical trial of AOH1996 began in October, and scientists are eager to uncover more about its mechanism of action to improve ongoing human trials. The groundbreaking cancer pill has brought renewed hope to cancer patients and their families worldwide, with the potential to transform cancer treatment and save countless lives.

FAQs

Q1:Is there a pill for cancer treatment?
In modern cancer treatment, numerous patients opt for oral chemotherapy. This approach proves more convenient for some, as the medication can be taken at home, eliminating the need for hospital or clinic visits for infusion. However, it is crucial to recognize that these oral pills carry equal potency to intravenous chemotherapy. **Q2:What drug destroys cancer cells?**Anthracycline chemotherapy targets the enzymes within cancer cells' DNA, inhibiting their ability to divide and proliferate. This form of treatment is effective against various types of cancer, making it a versatile option for patients. Some of these drugs are actinomycin-D, bleomycin, daunorubicin, and doxorubicin, among others.

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