Small Molecules for Restoring Activity of p53 Mutants found in Human Cancer

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BRIEF DESCRIPTION

This invention consists of novel small molecule compounds that bind to mutant variants of p53 and induce conformational changes to restore p53 function for treatment of human cancers.

SUGGESTED USES

· Intended for therapeutic use on multi-drug resistant tumors.

FEATURES/BENEFITS

· Broad application: targets multiple mutant p53 variants
· Longer therapeutic window than current p53 reactivating drugs
· Translational potential: predicted to be effective against drug-resistant tumors

FULL DESCRIPTION

A common feature of human tumor cells is the presence of mutations that allow for cells to bypass cell growth checkpoints and grow malignantly. One such protein afflicted with multiple mutation variants is p53, a tumor suppressor and activator of cell apoptosis. Mutations render this tumor-suppressing protein inactive, allowing for unregulated cell cycle progression and cancer cell migration to other organs. Cancer therapy drugs currently in development attempt to overcome the loss of p53 function by targeting the p53 pathway indirectly and are only effective against a small number of mutant p53 forms. Researchers at the University of California Irvine have created novel small molecule compounds that bind directly to mutated p53, fixing its confirmation and restoring protein function. These small molecules bind to multiple mutated p53 forms and are predicted to be most effective against drug-resistant cancers.

STATE OF DEVELOPMENT

In vitro: These small molecule compounds have demonstrated efficacy against Triple Negative Breast Cancer (TNBC) cell growth.
In vivo: These small molecule compounds reduce tumor size in mouse xenografts

PATENT STATUS

Patent Pending
RELATED MATERIALS


ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

» Small molecule drug leads for p53 mutant cancers