Researchers at the University of South Florida have developed a new combination therapy for the treatment of acute myeloid leukemia (AML).

Currently, few agents are able to effectively treat AML. Recent research has shown that approximately 25% of AML cells express an activated form of the protein FLT3 (p-FLT3), a tyrosine kinase on the cell surface, which is an indicator of a poor prognosis.

Agents have been developed to inhibit p-FLT3, but the clinical benefits of this agent when used alone are not as great as when used in combination with other anti-cancer agents.

Our scientists have developed a new combination therapy for treatment of AML using an inhibitor of p-FLT3 and a histone deacetylase (HDAC) inhibitor. HDAC inhibitors have been shown to induce apoptosis in cancer cells when used in combination with other anti-cancer agents. In vitro studies show that this new regimen induces a larger number of cells to undergo apoptosis than either agent alone. The development of a new effective therapy for the treatment of AML is imperative. This new combination therapy has the potential to become that treatment.

ADVANTAGES:

- Combination therapy induces apoptosis of more cells than either agent alone
- Treatment targets populations of difficult-to-treat AML cells

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Acute myeloid leukemia (AML). AML cells are targeted by HDAC inhibitors for use in combination therapy to increase sensitivity to anti-cancer treatments.