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**Frondoside A potentiates the effects of conventional therapeutic agents in acute leukemia****Fatma H Sajwani and Thomas E Adrian**  
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Acute leukemia is a major cause of mortality. Despite improvement of survival, patients still die from the disease or the treatment side effects. Thus new therapies are needed. Frondoside A is a glycoside from the sea cucumber, *Cucumaria frondosa* that has shown potent anticancer effects in different types of cancer. Studies in acute leukemia have been limited. The current study investigated the effects of frondoside A in acute leukemia cell lines alone and in combination with the drugs currently used for this malignancy. The acute leukemia cell lines used were CCL-119, CCL-240 and TIB-202. Cells were treated with different concentrations of frondoside A, vincristine, asparaginase and prednisolone each compound alone. The inhibitory concentration 50 ( $IC_{50}$ ) was determined. Treatment duration of 48h was chosen for the combination therapy experiments. Viability assessment post-treatment was done using CellTiter-Glo® luminescent assay. CCL-119 cells were sensitive to frondoside A ( $IC_{50}$  1.5 $\mu$ M). CCL-240 and TIB-202 were less sensitive to frondoside A treatment ( $IC_{50}$  of 2.5 $\mu$ M and 3.0 $\mu$ M respectively). Frondoside A markedly enhanced the anticancer effects of the conventional drugs. Asparaginase combined with Frondoside A  $IC_{50}$  was significantly better than asparaginase alone ( $P=0.003$  in CCL-119, 0.01 in CCL-240 and in TIB-202), Similar findings were demonstrated for vincristine. For prednisolone, the combination therapy was better in suppressing cell viability than the drug alone in CCL-119 ( $P$ -value=0.002) and in TIB-202 ( $P$ -value=0.001) but not CCL-240. These findings suggest that frondoside A may be valuable in the treatment of acute leukemia, particularly when used in combination with the current therapeutic drugs.

**Biography**

Fatma H Sajwani has completed her MD in Medicine from Sultan Qaboos University. She got her Master's degree in Cellular and Molecular Hematology from University of London in 2007. She was the Director of the Hematology Laboratory and Blood Bank in Al Qassimi Hospital, Sharjah-UAE from 2011 till she joined the PhD program in Cancer Biology in 2013 at the College of Medicine Health Sciences in United Arab Emirates University, Al-Ain-UAE.

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