



Ciclopirox Olamine in Combination with Cytarabine for Treatment of Lymphoid Malignancies

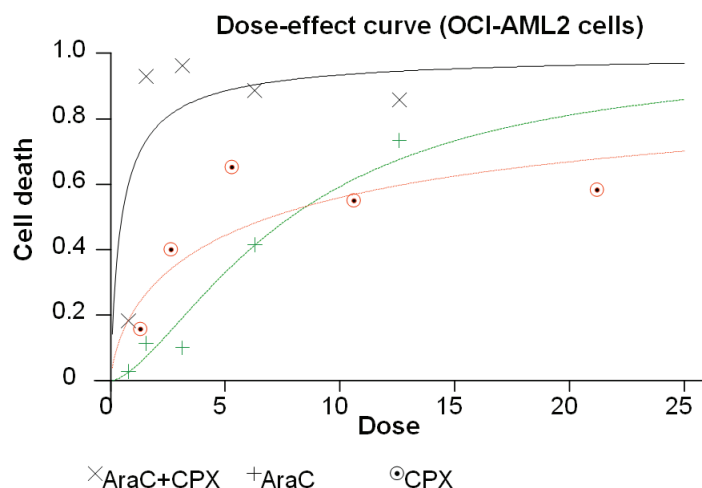
Overview of Technology:

Acute myeloid leukemia (AML) and multiple myeloma (MM) are malignant diseases resulting in the proliferation of abnormal cells of myeloid and lymphoid origin, respectively. Both diseases are characterized by poor responses to standard therapies. For example, elderly patients with either AML or myeloma and poor risk cytogenetics have a median survival of less than one year. Thus, for these patients and those with relapsed refractory disease novel therapies are needed. As many of these patients are frail, therapies that achieve an anti-myeloma or anti-leukemia effect without significant toxicity are highly desirable.

A high throughput screen identified ciclopirox olamine (CPX) as an inhibitor of the anti-apoptotic protein survivin. Subsequently, the researchers demonstrated that this compound in combination with cytarabine (AraC) synergistically induces cell death in hematological malignancies including multiple myeloma and leukemia cells.

The use of ciclopirox olamine in combination with cytarabine (AraC), an existing drug used to treat leukemia, provides novel treatments for proliferative diseases involving increased expression of survivin and/or hematological malignancies, such as acute myeloid leukemia (AML) and acute lymphocytic leukemia (ALL), and multiple myeloma (MM).

Figure: Effect of CPX and AraC (cytarabine) alone or in combination at the ratio 1:0.6 in OCI-AML2 cells represented as the fractional effect in which 1 is equal to 100% inhibition.



Ciclopirox olamine (CPX) synergizes with cytarabine (AraC) to induce cell death in leukemia cells.

Related Publication(s):

Eberhard, Y., *et al.* Chelation of intracellular iron with the anti-fungal agent ciclopirox olamine induces cell death in leukemia and myeloma cells. *Blood* (2009)

Patent:

PCT patent application - Filed 30 October 2009

Inventors:

Aaron Schimmer and Yanina Eberhard

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