



## Flubendazole in Combination with Vinca Alkaloids for the Treatment of Leukemia

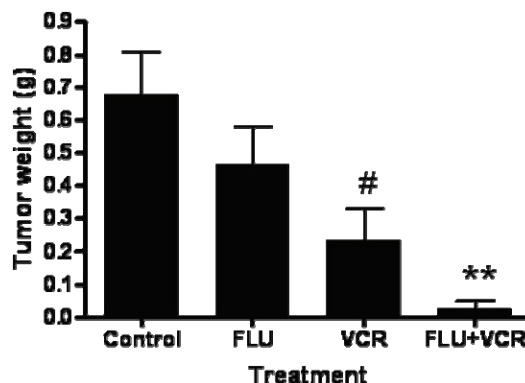
### Overview of Technology:

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 the anti-parasitic agent flubendazole inducing cell death at low micromolar concentrations in leukemia and myeloma cell lines. Subsequently, the researchers demonstrated that flubendazole, in combination with vinca alkaloids, e.g. vincristine (VCR), synergistically reduces tumour growth in mouse xenograft.

The use of flubendazole in combination with vinca alkaloids provides novel treatments for hematological malignancies, such as acute myeloid leukemia (AML) and multiple myeloma (MM).

*Figure:* Sub-lethally irradiated SCID mice were injected subcutaneously with OCI-AML2 cells (n = 40; 10 per group). After implantation, mice were treated with 20 mg/kg flubendazole, 0.25 mg/kg vincristine, a combination of flubendazole and vincristine (VCR), or vehicle control. After 18 days, mice were sacrificed and tumors were excised, measured and weighted. Data represent the mean  $\pm$  SD tumor weight. A representative experiment is shown. # p<0.05, \*\* p<0.001 (Unpaired t-test).



### Related Publication:

51<sup>st</sup> ASH annual meeting, 2009.

### Patent:

Provisional patent application - Filed 9 October 2009

### Inventors:

Aaron Schimmer, Jiayi Hu and Paul A. Spagnuolo

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