Figure 1 shows the structure of gemcitabine.

Figure 2 shows graphs comparing the cytotoxic effects of NUC-1031 and gemcitabine on primary leukaemia cells, and illustrating the significantly lower LD_{50} value calculated in respect of NUC-1031.

Figure 3 shows dot plots comparing the cytotoxic effects of NUC-1031 and gemcitabine on leukaemic stem cells, and illustrating that treatment with NUC-1031 preferentially depletes $CD34^+/CD123^+$ cells from within treated cell populations.

Figure 4 is a graph illustrating that NUC-1031 demonstrates significant reductions in $CD34^+/CD123^+$ leukaemic stem cell viability at concentrations of 1 μM and 2.5 μM as compared to gemcitabine.

Figure 5 sets out a graph and table comparing LD_{50} values generated using isolated Rp- and Sp- isomers of NUC-1031, a mixture of NUC-1031 isomers, or gemcitabine in cultures of KG1a leukaemic stem cells.

Figure 6 shows graphs demonstrating the ability of NUC-1031 to target leukaemic CSCs as compared to cytotoxic activity of gemcitabine.

DETAILED DESCRIPTION OF THE INVENTION

The following definitions may be useful in the understanding of the invention.

"NUC-1031"

The compound gemcitabine-[phenyl-benzoxy-L-alaninyl)]-phosphate (also referred to as NUC-1031, or by the trade name Acelarin) is a 'ProTide' derivative of the chemotherapeutic agent gemcitabine. It appears to avoid many of the inherent and acquired resistance mechanisms which limit the utility of gemcitabine (see WO2005/012327; and '*Application of ProTide Technology to Gemcitabine: A Successful Approach to Overcome the Key Cancer Resistance Mechanisms Leads to a New Agent (NUC-1031) in Clinical Development*'; Slusarczyk et all; *J. Med. Chem.*; **2014**, *57*, 1531−1542). Conceptually, it is a prodrug of gemcitabine monophosphate, although this is does not necessarily reflect its mechanism of action against cancer stem cells.