

Mike Price Fellowship: Gerben Borst

The winner of the Mike Price Fellowship 2010 offers a unique example of the teamwork the fellowship jointly sponsored by EACR and ECCO has enabled over the years



The Winner of the 2010 Mike Price Fellowship Award Gerben Borst MD PhD NKI-AVL

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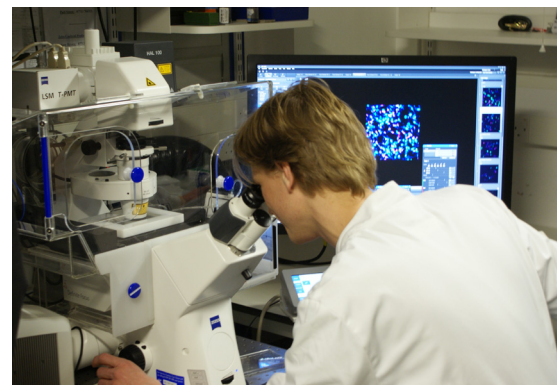
Radiotherapy is an important modality in the treatment of cancer patients whereby radiosensitisers are increasingly used to increase the therapeutic window. With support of the Mike Price Fellowship I had the opportunity to contribute in this field of research in the lab of Dr. Harrington at the Institute of Cancer Research in London.

Targeted drugs should specifically sensitise tumour cells and not normal tissue cells for irradiation induced DNA damage. This Mike Price Fellowship was initiated for exploration of the use of Chk 1 inhibition in combination with radiotherapy. Chk 1 is responsible for the cell cycle arrest in one of the cell cycle phases (i.e. G2) in order to repair radiation induced DNA damage. Many tumours lack the ability to arrest in another

cell cycle phase (i.e. G1) after DNA damage because the lack of functional p53. The hypothesis was that with abrogation of the G2 cell cycle arrest specifically tumour cells are sensitised for irradiation induced DNA damage. This proof of principle was confirmed by cell cycle analysis and colony assays in non-functional and functional p53 cell lines. Further exploration using fluorescence microscopy with DNA damage and repair markers, cell survival/apoptotic assays and real time imaging showed that the drugs targeted specifically non-functional p53 cells.

The results of our study are very promising. For this reason, *in vivo* experiments could be initiated within this relatively short period of time. This preclinical research will be of great importance for the treatment of cancer patients in the near future.

Thanks to the Mike Price Fellowship I have had the great opportunity to contribute in this important field



of cancer research. That financial support is of great importance is fully recognized by the Team of Dr. Harrington. In an ultimate charity challenge we were able to climb the four highest peaks of the UK with the whole team of researchers and clinicians in one weekend starting in the centre of London in the middle of the night. This team effort resembled the daily practice of the lab; collaboration and dedication in a financially and logistically responsible way in a pleasant atmosphere!

