

FIGHTING AGAINST CANCER

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WHAT'S THE PROBLEM?

- One in four (27%) of all deaths in the UK are caused by cancer
- 15,274 people died from cancer in Scotland in 2007
- Using DNA as a drug could kill tumours
- There is currently no carrier able to deliver the therapeutic DNA specifically to tumours after intravenous administration

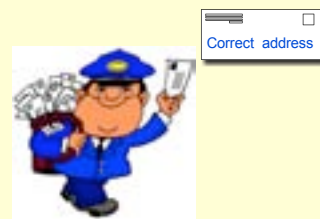
WHAT ARE WE DOING TO HELP TO SOLVE THE PROBLEM?

- **Our work:** preparing and evaluating new carriers able to deliver therapeutic DNA only to cancers, without going to normal tissues

NON-SPECIFIC DELIVERY:
the drug goes everywhere



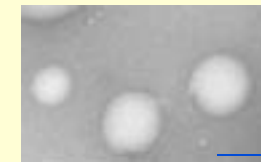
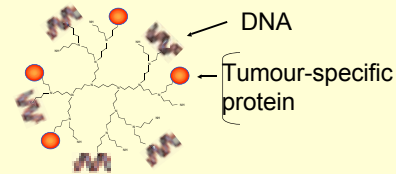
SPECIFIC DELIVERY (TARGETING):
the drug only goes to the tumour



- WHAT WE DO :** we « prepare the envelope »
- « **Letter** »: therapeutic DNA (p73)
 - « **Envelope** »: dendrimer
 - « **Address** »: a protein present on tumours

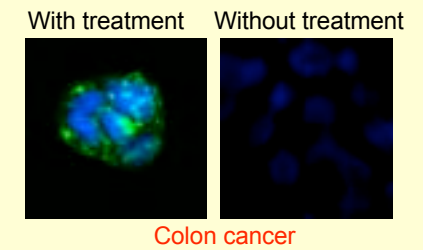
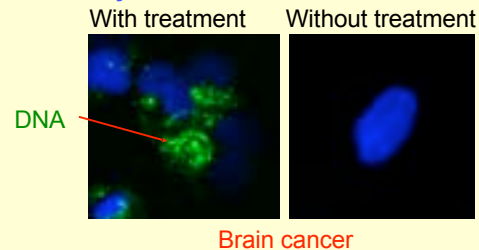
WHERE HAVE WE GOT TO SO FAR?

- **Preparation of the tumour-specific carrier delivering the DNA**

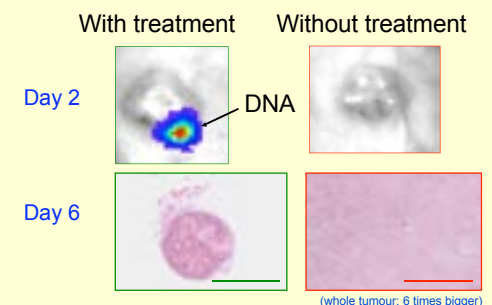
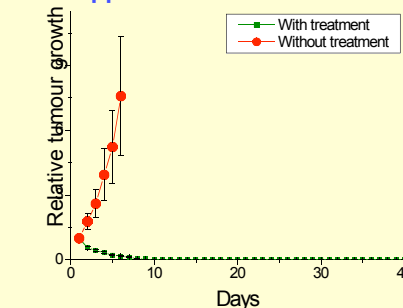


Electron microscopy picture
(bar: 200 nm)

- **Delivery of the DNA to the cancer cells**



- **Disappearance of the tumours**



(whole tumour: 6 times bigger)

ACKNOWLEDGMENTS

We gratefully acknowledge Medical Research Scotland for the financial support of this work.

- **Project title:** Evaluation of systemic p73 gene therapy of cancer using a novel transferrin-targeted dendrimer
- **Researchers:** Dr Christine Dufès, Strathclyde Institute of Pharmacy & Biomedical Sciences, Professor Kevin Ryan, Beatson Institute for Cancer Research, University of Glasgow, Dr Marie Boyd (Reader) & Dr Ayca Arslan-Ergul (Post-doctoral researcher), Strathclyde Institute of Pharmacy & Biomedical Sciences, University of Strathclyde