BACULOGENES: DESIGNING AN IMPROVED GENE THERAPY VECTOR

The insect baculovirus AcMNPV is another promising gene therapy vector that is being developed by the EU funded Baculogenes project.

Advantages of AcMNPV include:-
- Large insert capacity for foreign DNA.
- No pre-existing immunity (helping it evade our immune system).
- Efficient nuclear gene delivery to dividing and non-dividing cells.
- It can easily be produced inexpensively in large quantities.

Our aims within the Baculogenes project are:
1. to determine what signals govern packaging of viral DNA;
2. to engineer the virus to be targeted towards prostate cancer cells and to only express therapeutic genes within those cells.

GIANT CONSORTIUM GENE THERAPY

The aim of the EU-funded GIANT project - Gene Therapy: An Integrated Approach for Neoplastic Treatment - is to develop and test novel prostate-targeted gene therapy vectors.

The role of YCR-CRU within the GIANT consortium is to carry out in vitro cell model testing of novel gene therapy vectors and molecules:

Electron microscopy showing holes observed in outer cells of an LNCaP spheroid 3 days after infection with a prostate targeted adenovirus.

LNCaP metastatic prostate cells grown in 3D and infected with an adenovirus (blue = cell DNA, green = adenovirus).

BPH-1 prostate cells (turquoise = cell nuclei) bound to transferrin peptide (red), a potential molecule for targeting gene therapy vectors.