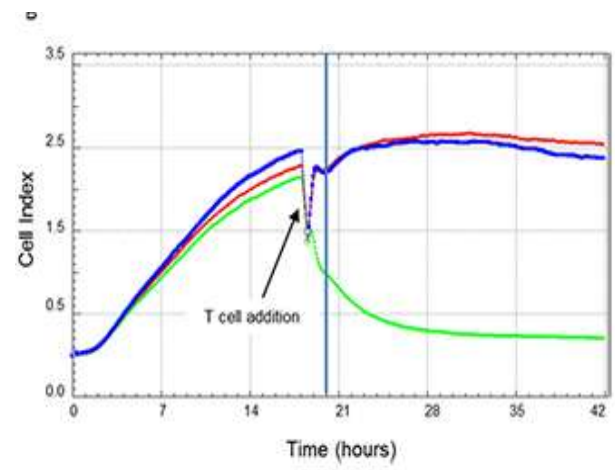
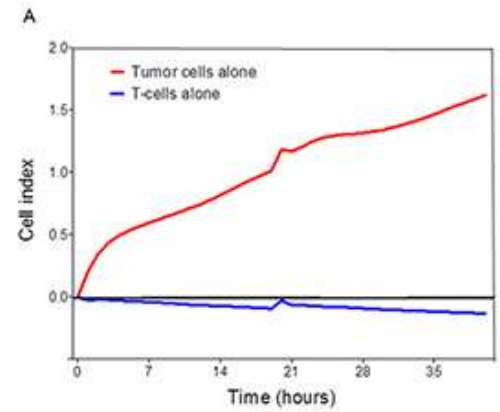
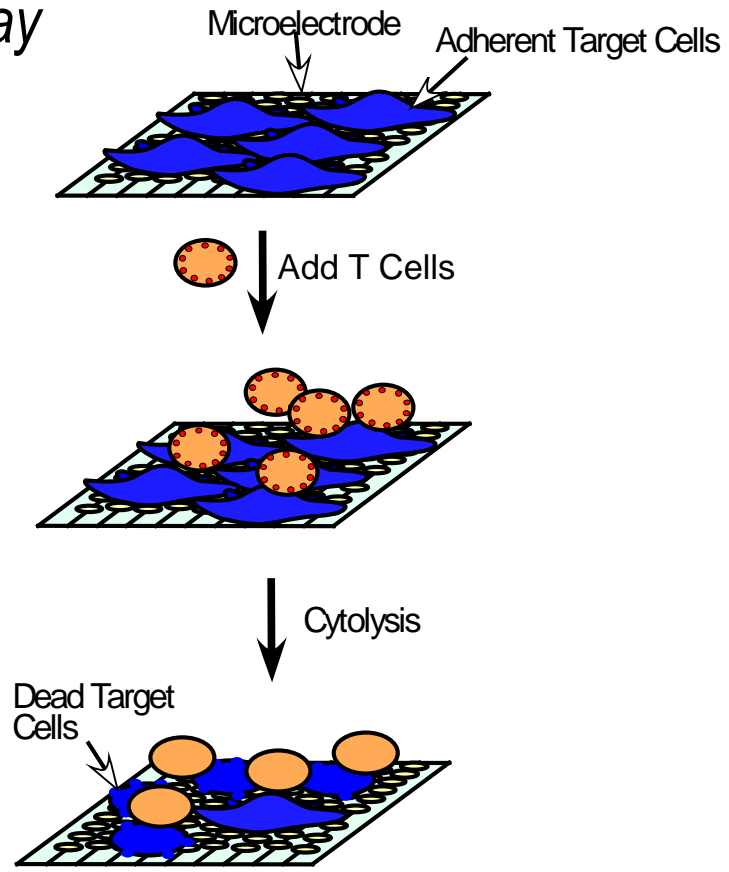


Using Impedance-Based Approaches for Measuring Cell-Mediated Cytotoxicity; Antibody-Dependent (ADCC) and Chimeric Antigen Receptor – T (CAR-T)

**Vashu Pamnani, PhD.
Cambridge Bioscience**

T Cells Non-Adherent Property is Useful in Cytolytic Assay

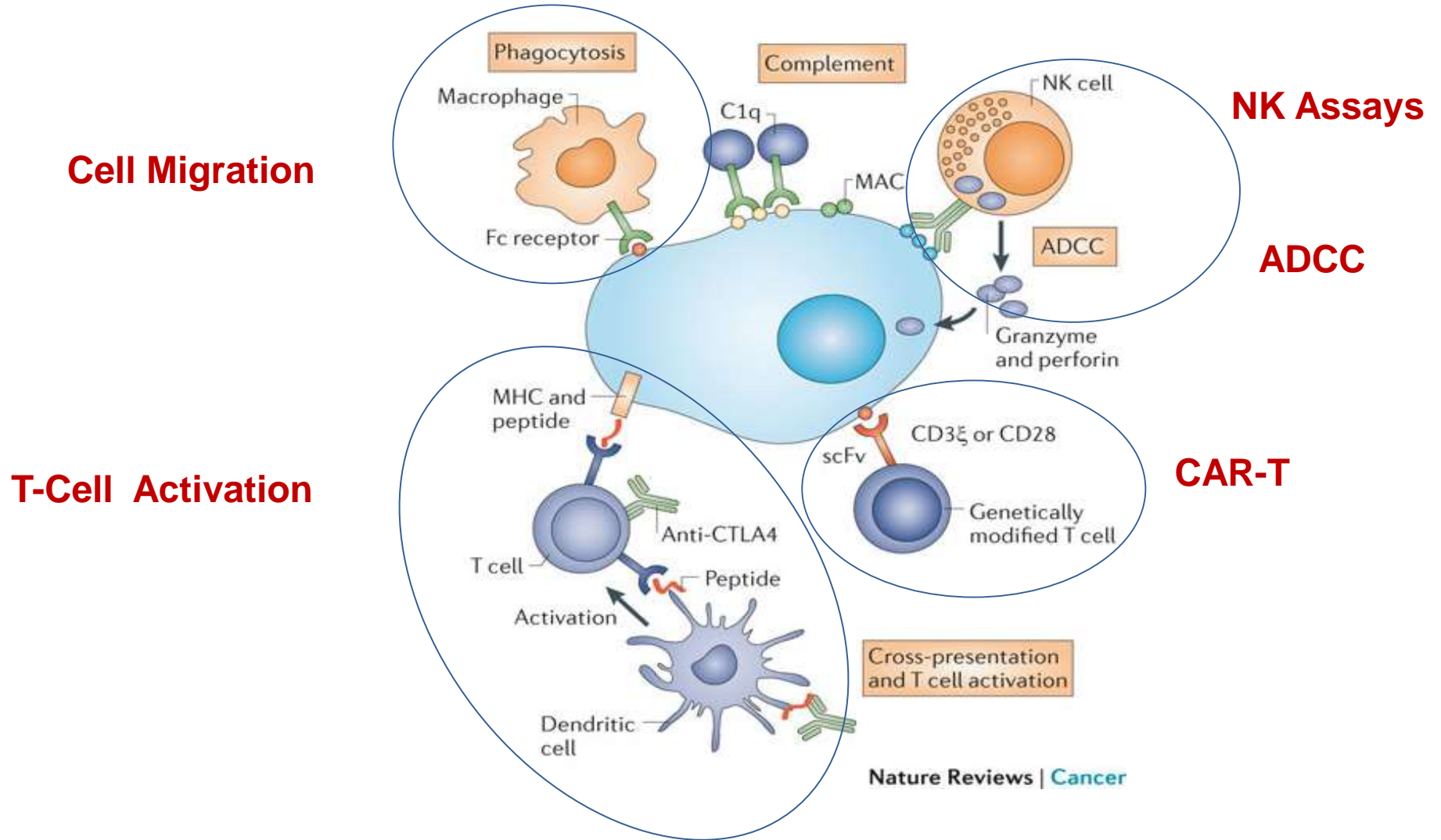


Background

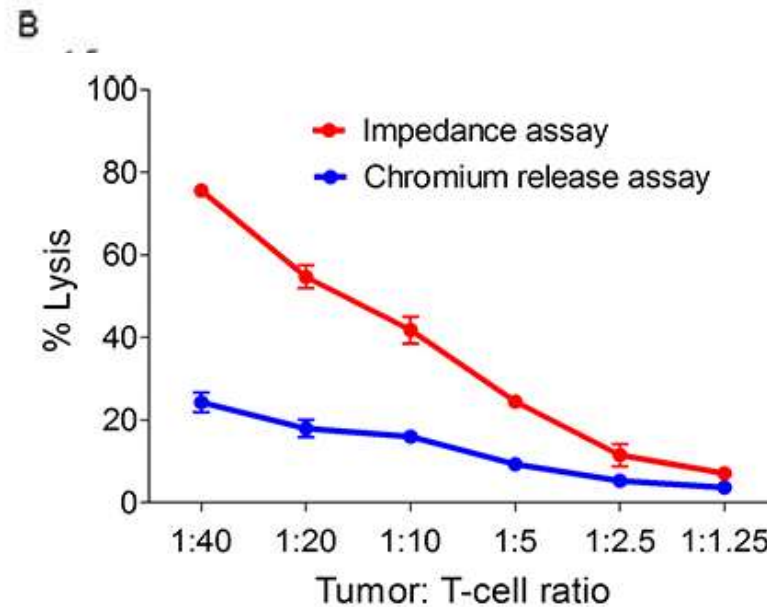
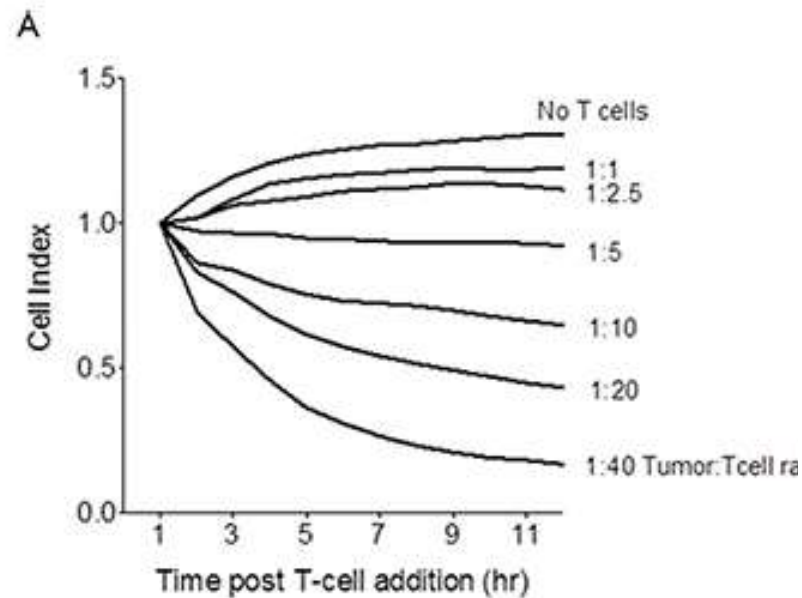
- CMC assays - typically performed using radioactivity (Cr 51) or other label-based assays.
- Target cell is labeled and then exposed to different densities of effector cells.
- The label is released into the supernatant when target cells are killed

Drawbacks

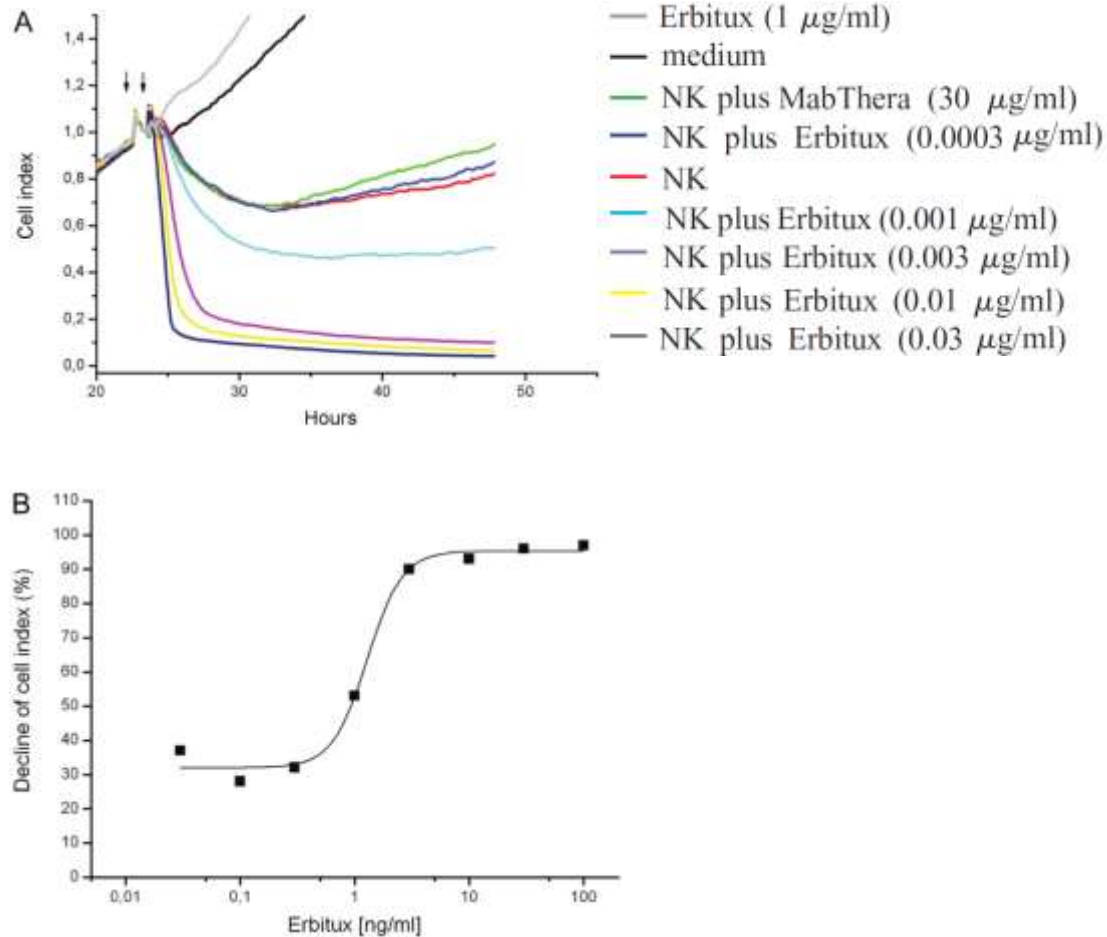
- Sample processing is complex, tedious and time consuming, or involves handling of radioactivity.
- The label has a tendency to leach out of the cell, thus limiting the possible assay window.
- Necessary washing steps may damage or kill (already knocked) target cells, thus falsifying the results.



Killer T cell Activity is Dose Dependent



Detection of Antibody Dependent Cell-mediated Cytolysis (ADCC)



Assay Drug Dev Technol. 2006;4(5):555-63.

Dynamic detection of natural killer cell-mediated cytotoxicity and cell adhesion by electrical impedance measurements.

Glamann J and Hansen AJ., Novo Nordisk A/S, Denmark

Key Benefits:

- **Label-free** - no secondary assays required, and no interference with cell function
- **Time saving** - no tedious, time-consuming sample processing at each time point, no handling of radioactivity
- **Short to long term monitoring**- there is no label to leak out of the cells and therefore No requirement for sample processing at unsociable hours (either costly or you are missing valuable data points)
- **Can obtain kinetic data** – continuous, uninterrupted monitoring

Key Benefits:

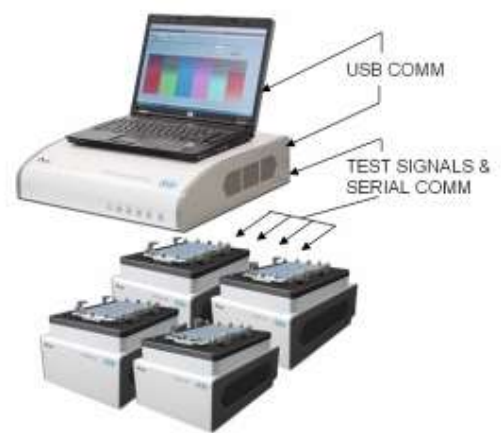
- **Continuous QC** – Quality assurance for cell viability
- **Quantitative** – cell number, morphology, viability
- **Assays at Physiological conditions** – can be placed in a standard incubator
- **Broad applications** – cell cytotox, invasion, migration, proliferation, etc..

Some Applications

- Compound-mediated Cytotoxicity
- Cell Invasion and Migration
- Cell proliferation
- Cell Adhesion and Spreading
- Functional Monitoring of Receptor Tyrosine Kinase Signalling
- Functional Monitoring of GPCR Signalling
- IgE Receptor Function
- Cell Quality
- Barrier Function
- Viral Quantitation

Drug Discovery Pipeline

Throughput



RTCA-HT384
- 4x 384 well



RTCA-MP
- 6x 96 well



RTCA-SP96
- 96 well



RTCA-iCelligence
- 2x 8 well



RTCA-Cardio
- 96 well



RTCA-DP
- 16 well
Specially for Migration studies

- xCelligence is ideal for handling assays involving T cells targeted at tumour cell
- xCELLigence will detect adherent cells as they attach to the electrodes on the culture plates, but it cannot detect T-cells since they are suspension cells
- = a very simple, label-free assay where we can detect tumour cell death, and can easily separate out the T-cells



Say NO to Cr⁵¹!

Removing Cr⁵¹ from ADCC and CDC
assays has never been easier.
Switch to xCELLigence® today!



Come and See us at booth:

F1

OR

View Poster: **144**

For more information

Thanks for Listening