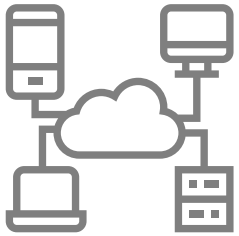
Physiomics

Modelling in immuno-oncology

Biotrinity, April 2020

Physiomics brings together a unique combination of capabilities…

Knowledge of **cancer biology** from industry and academia



Understanding of pre-clinical and clinical **data** sourcing and curation

Expertise in **quantitative pharmacology**

Experience in **modelling and AI** techniques such as machine learning

…to answer key development questions for our clients

Recommend **efficacy/ toxicity** trade-offs ✓

Predict **biologically effective dose in humans** to support clinical translation ✓

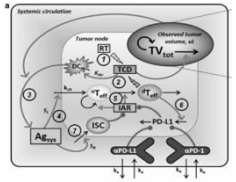
Recommend **combination partner agent** for proprietary in-house asset ✓

Physiomics is a consultancy focused on quantitative modelling in oncology

PK/PD analysis

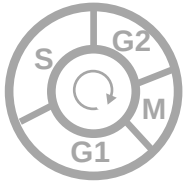
- Data analysis and interpretation
- PK/PD modelling (NCA, PopPK)
- In-vitro, in-vivo, clinical

Quantitative Systems Pharmacology



- Pathway models
- PBPK
- Literature, bespoke or hybrid

Virtual Tumour™



- In-silico cell-cycle model of tumour growth
- Predicts tumour regression
- Mono or combination therapy

Personalised medicine

- Grant funded
- Predict response to treatment for individuals

We've completed over 70 commercial and grant funded projects

Big pharma
Merck, MSD, Lilly,
Bayer and others

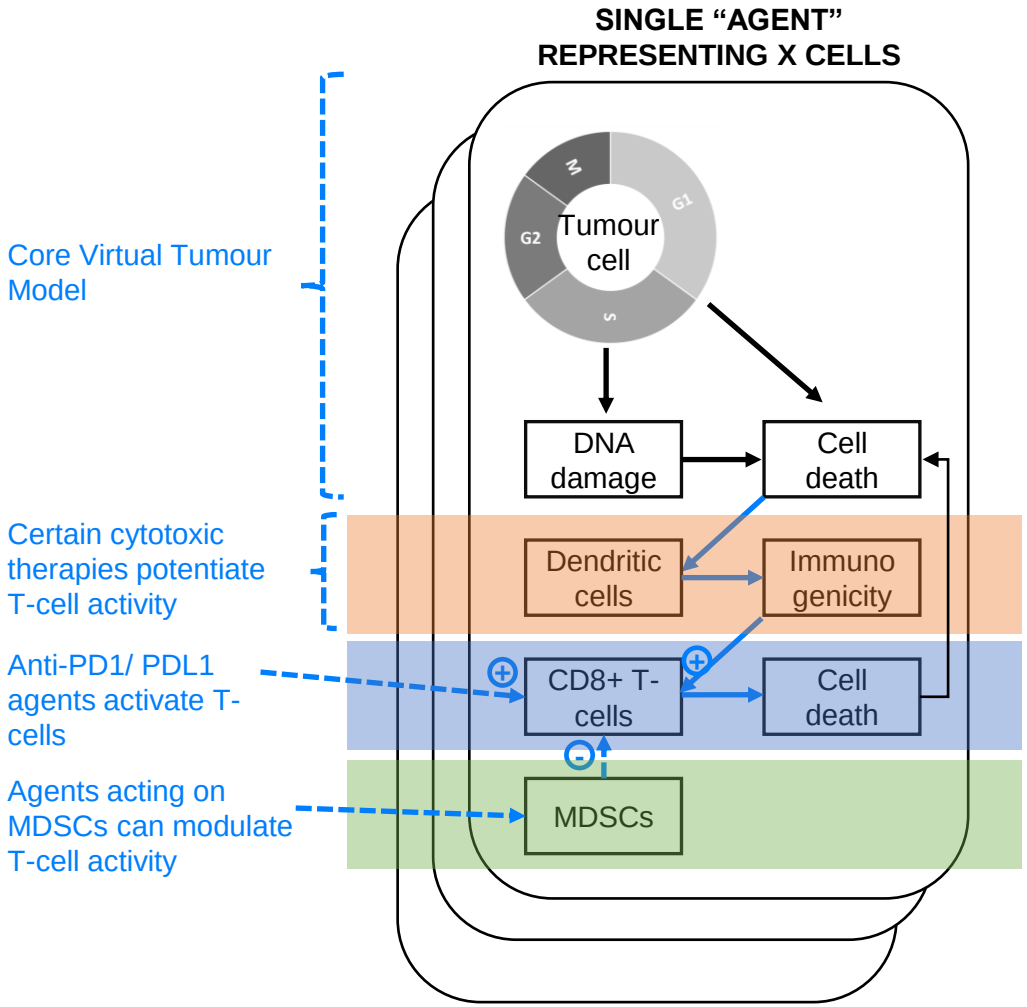
Grants
Innovate UK, EU-FP6
(TEMPO), Carbon Trust

Biotech/ Midcap
Bicycle Therapeutics, CRUK
Cellcentric, Convert Pharma,
and others

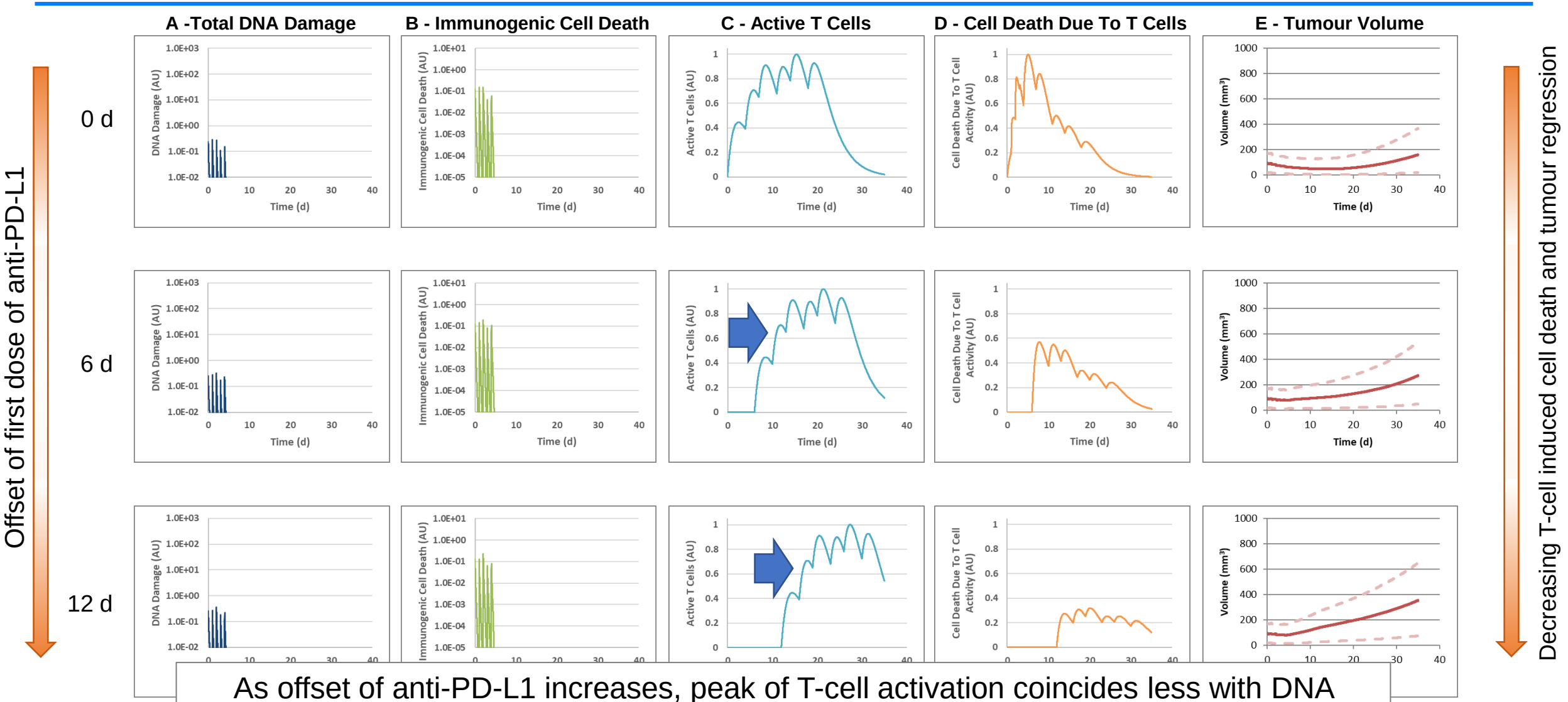
Academic
Medicines Discovery Catapult, NIH, Oxford University,
Oxford AHSN, Institute of Cancer Research, CRT

Our Virtual Tumour™ platform has been extended to enable modelling of immuno-oncology combination treatment

- Various abstracted immune pathways are incorporated:
  - Stimulatory effect of anti-PD-(L)1 on T-cell activation levels, leading to tumour cell death
  - Potentiation by some cytotoxic agents via induction of immunogenic cell death and recruitment/maturation of dendritic cells
  - Inhibitory effect of MDSCs on T-cell activity (allowing consideration of drugs that act on this cell type)
- This enables flexible simulation of combinations of anti-PD(L)1, DDR agents, RT, immunogenic cytotoxics, agents acting on MDSCs and more



This enables us to predict and explain timing effects in terms of species modelled – for example, RT + anti-PD-L1



As offset of anti-PD-L1 increases, peak of T-cell activation coincides less with DNA damage, reducing opportunity for potentiation

Why work with Physiomics?

- We help solve real development challenges
- We supplement existing client resources to increase capacity and shorten timelines
- Exclusively focused on cancer
- Deep expertise
  - >70 big pharma, biotech and grant funded projects
  - Significant academic as well as industry experience
- Can bring proprietary (Virtual Tumour™) and other industry standard models to bear on R&D challenges
  - Experience with large number of targets, cell lines, PDX
- We are a small team that offers a dedicated, flexible service

Our website www.physiomics.co.uk includes examples of our work and a contact form – we'd love to hear from you!