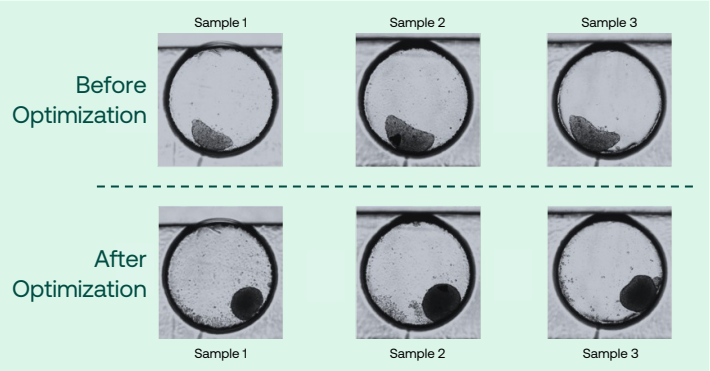
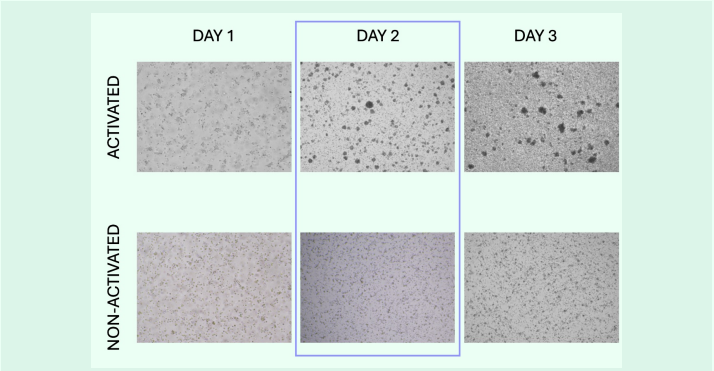
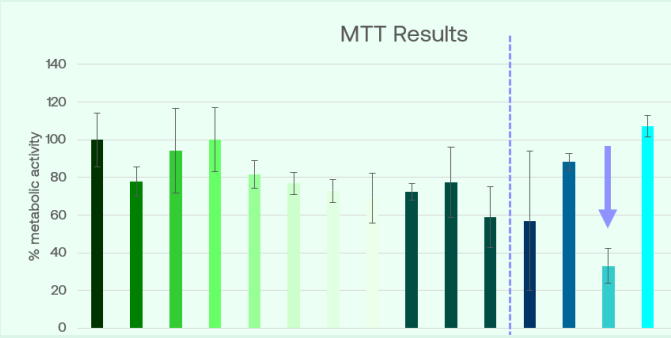
Case Study: µMass™ showed there was no benefit of using a combination therapy—then, the CEO halted phase II

Objective: investigate the potency of a combination-therapy strategy versus a singular clinical asset for colon cancer using chiron's proprietary µMass™







Step 1: optimization of tumour-aggregate culture

Optimization of HT-29 colon cancer culture and robust aggregate formation enabled by µMass platform

Step 2: optimize immune-component activation

Use of PBMCs was tested using CD3/CD28 to ensure optimal timepoint for introduction of PBMCs into co-culture (µMass enabled)

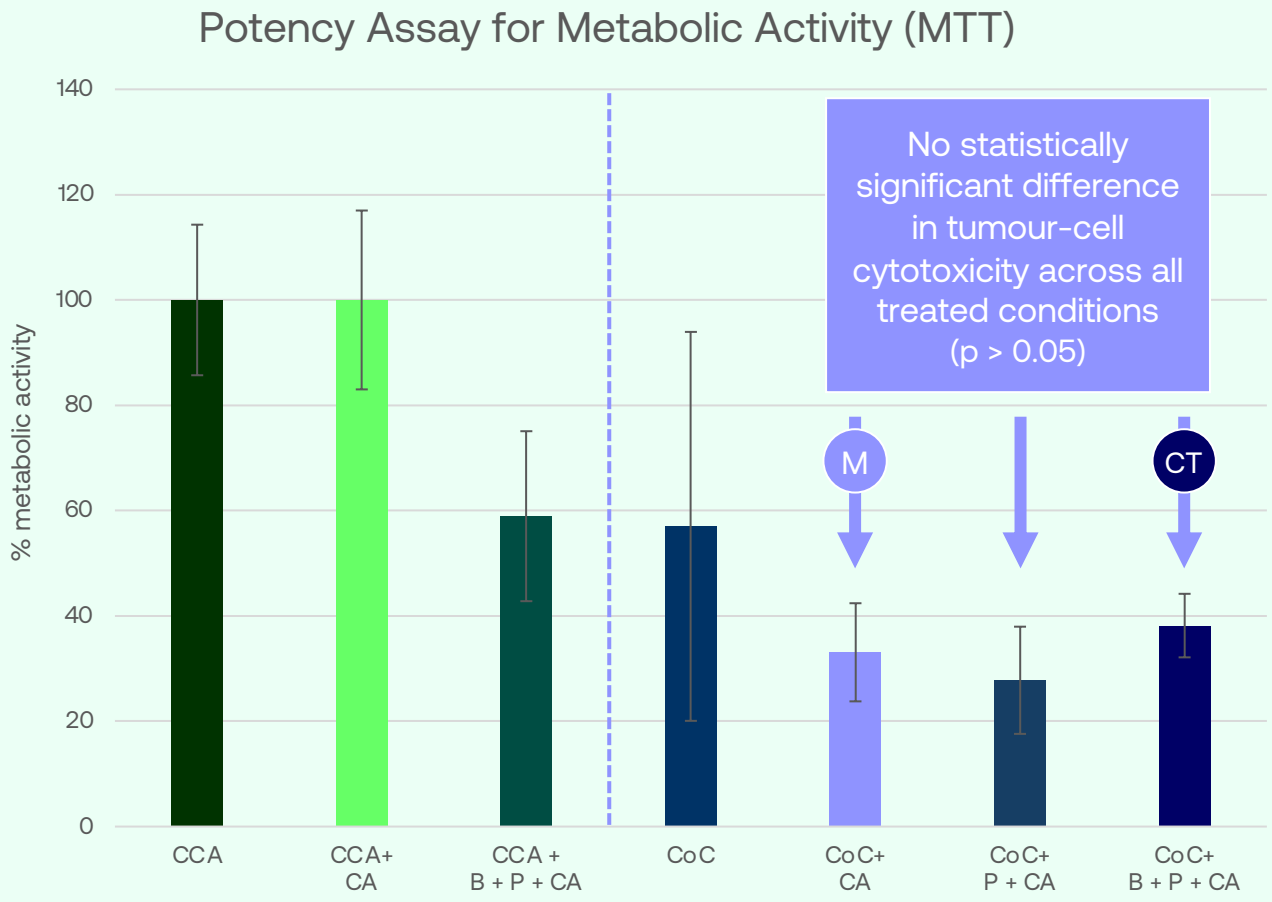
Step 3: test cell viability after therapy introduction

An MTT assay was performed on the HT-29 colon-cancer aggregates to assess cell viability enabled by µMass platform

Aggregate optimization: 3 weeks → Immune optimization: 1 week → Results assays: 2 weeks

*HT-29: colorectal adenocarcinoma cell line *PBMC: peripheral blood mononuclear cells *CD3/CD28: monoclonal antibodies for T cell activation *MTT: tetrazolium-based metabolic cell viability assay

Outcome: µMass™ provided a clear signal—no additional benefit of combination therapy (CT) over monotherapy (M)



How it was tested

HT-29 colon-cancer aggregates co-cultured with activated PBMCs in µMass™—capturing immune-tumour interaction in a format not achievable with standard 2D culture

What the data showed

No combination benefit detected.

Monotherapy demonstrated equivalent tumour-cell cytotoxicity to the combination-therapy approach across all tested conditions.

What the client did

Phase II trial halted.
Combination therapy patents abandoned.

Program investment redirected before further spend

*B: bevacizumab
*CCA: colon-cancer aggregate (HT-29)
*MTT: tetrazolium-based metabolic cell viability assay
*CA: clinical asset
*CoC: co-culture of CCA and PBMCs (CD3/CD28)
*P: pembrolizumab

Assay completed in less than six weeks — GLP-like, SOP-based workflows — ISO-certified facilities

Take-home Message: µMass™ predicted—in-vitro—what a phase II clinical trial confirmed at a cost of $15M+

The insights were waiting to be found—it just needed the right platform to see them

Phase II oncology trials range from $7 to $20 million

The cost of the lesson, which does not account for the sunk cost of IP that will never be commercialized

µMass™ predicted the outcome in-vitro

If the µMass™ assay was run during preclinical:

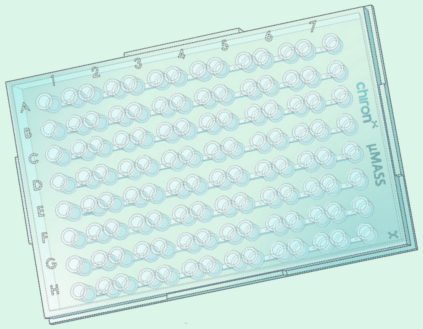
- Leaner monotherapy trial
- Correct IP protected
- Clinical signal to follow

µMass™ means decision intelligence

µMass™ enables human-relevant, predictive data that maps to clinical reality

Gain access to µMass™ for your program

Whether you need study execution, in-house platform access, or a tailor-made solution—chiron offers multiple ways to engage

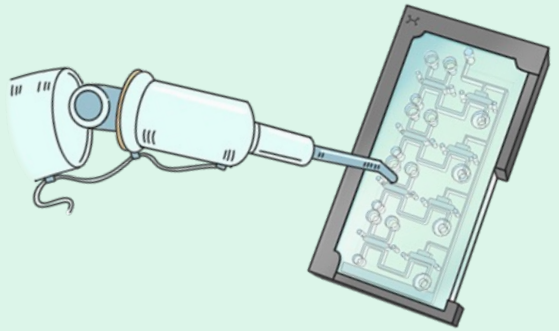


Device Sales

Device sales via technology transfer: bring µMass™ into your own laboratory as a consumable platform; compatible with standard workflows and equipment

Contract Research Services

Outsource studies to chiron for rapid, expert execution, generating human-relevant, decision-ready data with no internal burden



Model Co-development

Co-develop a bespoke model with chiron that fits your specific therapeutic, disease, or translational application

Why work with chiron?

Human-relevant insights, for more informed decision making, resulting in lower a financial burden for drug development

Difficult-to-access insights, made measurable

- Direct comparison of multiple treatments and donors on one platform
- Cell-therapy and advanced-modality testing where animal models are poorly predictive
- 3D solid tumour models that better capture tumour structure

More learning, at a lower cost per data point

- Generate large, comparable datasets that can be fed to predictive platforms
- Enable leaner clinical trials, reducing the development timeline
- Rapid application development and assay processing

Thank You