INVITROCUE®
Transforming bioanalytics

PATIENT DERIVED ORGANOIDS (PDO)

Bridging the gap between animal models and *in vitro* models

Invitrocue's Patient-derived tumor organoids (PDOs) are clusters of tumor cells derived from patients diagnosed with metastatic cancer. PDOs recapitulates the genetic, morphological features and heterogeneity of the native tumor. At Invitrocue, we regenerate the 3D tumour microenvironment using our propriety 3D cell culture technology. This provides a more clinically relevant model for preclinical drug efficacy and toxicity assessment.

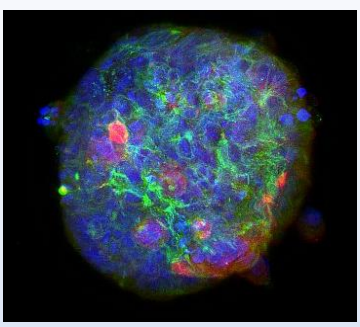
Applications

- Cancer Research
- Immunotherapy Research
- Cell Therapy
- Disease Modelling
- Drug Discovery
- Precision Medicine

Benefits

- Stably retains the complexity and heterogeneity of the parent tumour in vitro
- Scalable for high throughput screening
- Physiologically more relevant to human setting compared to cell lines
- Allows personalized study

Immunofluorescence Images

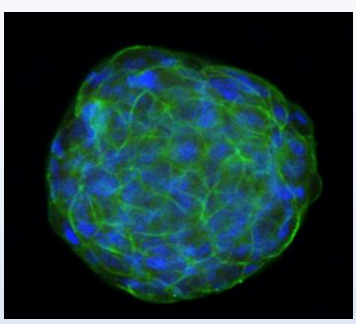


Colorectal PDO

Epithelial cell markers E-cadherin

Phosphorylated Akt at Ser473

Nucleus



HER2⁺Breast PDO.

Human epidermal growth factor receptor 2 (HER2)

Nucleus

Figure 1. Colorectal and Breast cancer PDOs grown in 3D structure recapitulating the specific tumour markers as diagnosed in patients' biopsies.

Inventory

List of PDOs for services*	Type of Service	Turnaround Time
Breast Carcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks
Colon Adenocarcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks
Colorectal Adenocarcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks
Lung Adenocarcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks
Ovarian Adenocarcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks
Pancreatic Adenocarcinoma, Stage IV	Cell Proliferation / Apoptosis	2-4 Weeks

** For any cancer types not listed above, please contact us to discuss your specific needs.*

Contact us now to learn more about our PDO services!

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Invitrocue is committed to developing innovative products and services. We are pleased to now offer our PDO services in drug development, for rapid and accurate preclinical drug efficacy and safety assessments for cancer therapeutics.

Case Studies

Case Study 1 (Lung Cancer PDO)

Study Objective: To evaluate the efficacy of New Drug Entity (NDE) on Lung Cancer PDO as a comparison with Standard of Care (SOC) drugs.

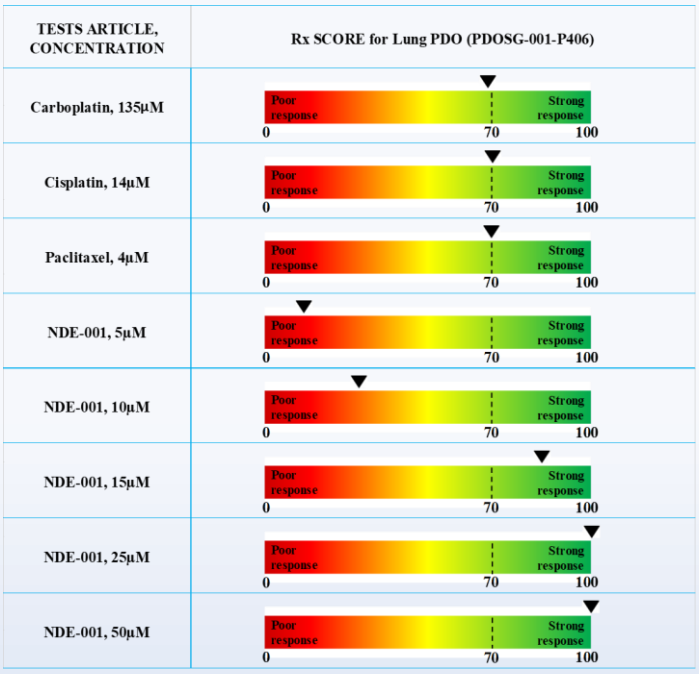

Figure 2. Rx Score of Test Articles and SOC Drugs on Lung Cancer PDO.

Lung PDO (PDOSG-001-P406) was treated with SOC drugs or NDE-001 at various concentrations in specific 3D lung culture media. Rx score was determined at 72 hours. Increasing doses of NDE-001 showed a progressive dose response against Lung PDO and the effect is comparable to SOC drugs like Carboplatin, Cisplatin and Paclitaxel.

Test article responses are represented by Rx.
Rx score indicates the percentage of cell death caused by test article treatments at 72 hours.

Case Study 2 (Colorectal Cancer PDO)

Study Objective: To evaluate the efficacy of New Drug Entity (NDE) on Colorectal Cancer PDO as a comparison with Standard of Care (SOC) drugs.

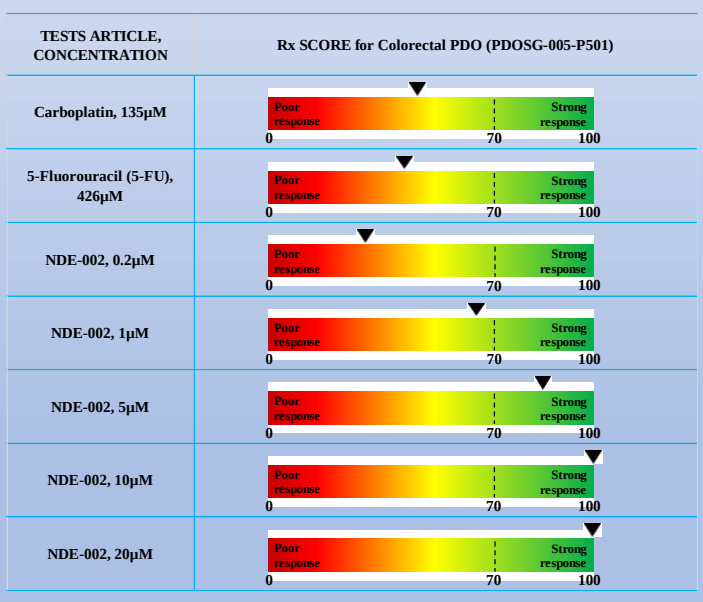

Figure 3. Rx Score of Test Articles and SOC Drugs on Colorectal Cancer PDO.

Colorectal PDO (PDOSG-005-P501) was treated with SOC drugs or NDE-002 at various concentrations in specific 3D colorectal culture media. Rx score was determined at 72 hours. Drug resistance was observed with chemotherapeutic drugs such as Carboplatin and 5-FU. Increasing doses of NDE-002 showed a progressive dose response against Colorectal PDO.

Test article responses are represented by Rx.
Rx score indicates the percentage of cell death caused by test article treatments at 72 hours.

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