Patient-derived xenograft collection from prostate cancer

FROM HORMONE-NAÏVE TO CASTRATE RESISTANT PROSTATE CANCER PDX MODELS

Model

- Urosphere has developed a biobank of 6 Patient-derived xenografts (PDX) from prostate cancer [1];
- This biobank is composed of hormone-naïve, hormone sensitive and castrate resistant prostate cancer models (CRPC). [1-2];
- These models have been highly characterized (WES, Transcriptomic analyses, etc).

Interest

- Test efficacy of new drugs in immunocompromised mice;
  - > Targeted drug therapy
  - > Chemotherapy
  - > Hormone-therapy
- Identify drug combinations;
- Analyse Pharmacokinetics / pharmacodynamics responses;
- Mimic a clinical trial with surrogate models;
  - > Identify of biomarkers in responder and non-responder populations

Model Description

- Fresh tumours are harvested from donor mice;
- Fragments 20 mm3 are implanted into anesthetized mice.
- Tumours are measured 2 or 3 times a week;
- Mice with tumours reaching 60 to 270 mm^3 are included in treatment period;
- Treatment is administered as per protocol.

Parameters evaluated

- Body weight variations
- Tumour growth inhibition (TGI);
- Tumour growth delay index (TGDi);
- Mean Relative Tumour Volume (mRTV);
- Response to treatment based on RECIST criteria.

Scientific publications

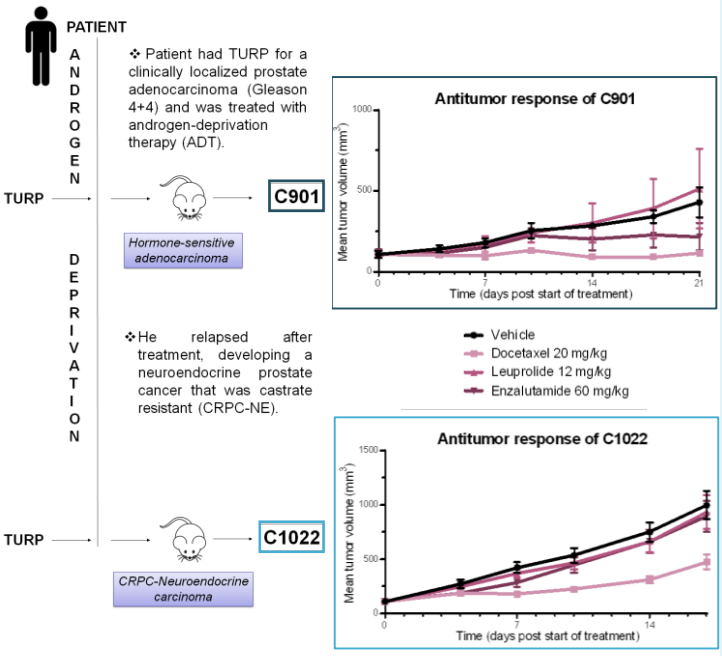
[1] Lassalle *et al.*, AACR 2020, San Diego, USA
[2] Lang *et al.*, AACR, Atlanta, 2019, USA

Pharmacological responses to Androgen Deprivation Therapy and Standard of Care

PDX ID	Patient's type of tumour	Enzalutamide	Docetaxel
G266	CRPC	NR	NR
C901	Hormone sensitive	R	HR
C1022	Neuroendocrine-CRPC (NE-CRPC)	NR	R
PCU-018	Hormone naive	NR	NR
PCU-021	Hormone naive	NR	NR
PCU-012	Hormone naive	n.a.	n.a.

NR: non responder; R: responder; HR: high responder; n.a: not available; CRPC: Castrate Resistant Prostate Cancer

From hormone-sensitive adenocarcinoma to NE-CRPC



C901 & C1022:

- 2 PDX models from the same patient's tumours;
- C901 responds to Enzalutamide while C1022 doesn't;
- They are unique preclinical tools to identify resistance mechanisms and to develop new therapeutic strategies.

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