A patient-derived explant culture of human prostate cancer to test drug efficacy

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Contact person

Johan Swinnen

Organisation

Name of the organisation Katholieke Universiteit Leuven (KUL)

Department Oncology

Country Belgium

Geographical Area Flemish Region

Partners and collaborations

University of Adelaide

SCOPE OF THE METHOD

The Method relates to	Human health
The Method is situated in	Basic Research, Translational - Applied Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	Human prostate cancer tissue

DESCRIPTION

Method keywords

Explant

human

Patient-derived

Scientific area keywords

prostate

cancer

drug testing

Method description

Patient-derived explants of prostate cancer provide an *ex vivo* model that retains the architecture and microenvironment of the native tissue. It enables the evaluation of drug responses on individual patient’s tumors *ex vivo* without passaging in animals. It is compatible with all molecular analysis methods.

See in the references "A patient-derived explant (PDE) model of hormone-dependent cancer."

Lab equipment

CO2-incubator ;

Laminar flow ;

Cell culture room.

Method status

History of use

Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages

Patient-derived ;

Ex vivo ;

No animals involved ;

Retains original tissue architecture and tumor microenvironment ;

Economic ;

Reasonable throughput.

Challenges

Long-term culture is challenging ;

Limited around of material.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

A patient-derived explant (PDE) model of hormone-dependent cancer. Centenera MM, Hickey TE, Jindal S, Ryan NK, Ravindranathan P, Mohammed H, Robinson JL, Schiewer MJ, Ma S, Kapur P, Sutherland PD, Hoffmann CE, Roehrborn CG, Gomella LG, Carroll JS, Birrell SN, Knudsen KE, Raj GV, Butler LM, Tilley WD. Mol Oncol. 2018 Sep;12(9):1608-1622. doi: 10.1002/1878-0261.12354. Epub 2018 Aug 16