

Fresh tumour biopsies in world-first technique for cancer treatments

August 25 2020



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An innovative technique to improve cancer treatments using tumor biopsies less than 30 minutes after they're taken has been developed at The University of Queensland.

The "Drug uptake in ex Vivo tumors" technique was developed after researchers found fresh patient tumor biopsies responded differently to

treatments than the tissue cultures traditionally used.

Its inventor, UQ Diamantina Institute's Dr. Fiona Simpson, said it could be used to show how long antibodies stayed active in patients, or when antibodies were taken into the tumor where they're destroyed.

"The technique will significantly help pharmaceutical and technology companies design future cancer drugs," Dr. Simpson said.

"Until now, scientists have only looked at how cancer drugs interact with tissue culture, not fresh tumors. Applying medications to [tissue culture](#) doesn't always work because the [immune system](#) responds differently in a body. I thought it was pretty obvious that we should test [cancer drugs](#) on actual tumors, but people kept telling my research team that it wouldn't work!"

The technique includes a step-by-step process to help [drug companies](#) and researchers better understand how drugs interact with patients, and respond to targeted treatments.

"We've created a comprehensive process, including detailed videos on tumor extraction and drug-testing processes, for researchers around the world to use," she said.

"The technique is useful for all types of cancers, and we're very excited about its possibilities."

The research was published in *Cell's STAR Protocols*.

More information: Shannon R. Joseph et al. Antibody/Ligand-Target Receptor Internalization Assay Protocol Using Fresh Human or Murine Tumor Ex Vivo Samples, *STAR Protocols* (2020). [DOI: 10.1016/j.xpro.2020.100087](#)

Provided by University of Queensland

Citation: Fresh tumour biopsies in world-first technique for cancer treatments (2020, August 25) retrieved 17 July 2024 from <https://medicalxpress.com/news/2020-08-fresh-tumour-biopsies-world-first-technique.html>

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