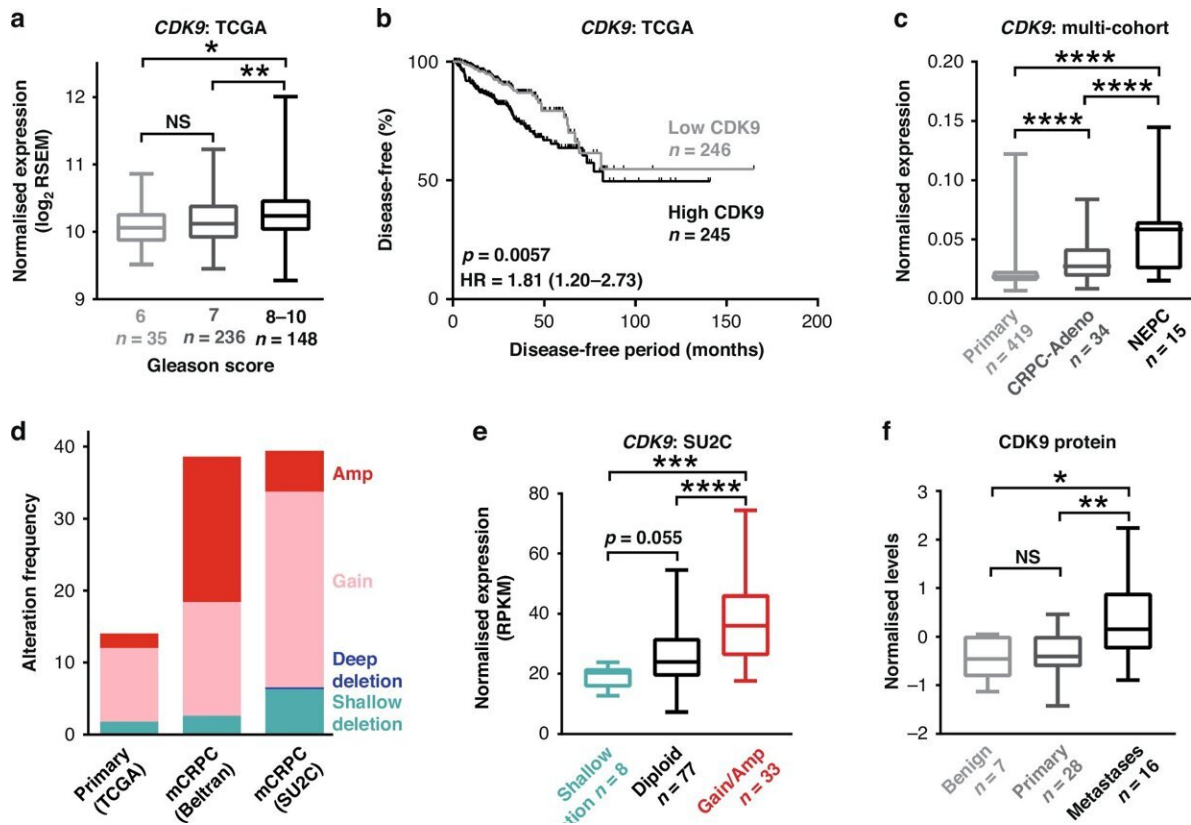


# Proof-of-principle study uncovers promising treatment for incurable prostate cancer

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CDK9 is commonly over-expressed and amplified in prostate cancer. Credit: *British Journal of Cancer* (2024). DOI: 10.1038/s41416-024-02810-8

Researchers from Flinders University and University of South Australia have unveiled a promising new strategy that could be used to treat the

most aggressive forms of prostate cancer. Their study, [published](#) in *British Journal of Cancer*, explores the role of a novel drug, CDKI-73, to tackle drug-resistant prostate cancer that defies conventional therapies.

Prostate cancer is the most commonly diagnosed cancer in Australian men and causes more than 3,300 deaths each year. The disease frequently evolves into aggressive forms that do not respond to standard hormone therapies.

Despite this, prostate cancer remains a sensitive and often under-discussed topic.

The study, led by Associate Professor Luke Selth from Flinders University and Professor Shudong Wang from University of South Australia, investigated the potential of targeting a protein called Cyclin-Dependent Kinase 9 (CDK9), which plays a crucial role in the growth and survival of prostate cancer cells.

More specifically, the researchers tested whether an inhibitor of CDK9, CDKI-73, could overcome the cancer's resistance to current treatments.

"Our research demonstrates that CDKI-73 potently blocks the growth of prostate cancer, even aggressive subtypes of the disease that are resistant to current treatments," says Associate Professor Selth. "Importantly, CDKI-73 targets cancer cells specifically without harming normal cells and its potential as an oral capsule makes it an attractive treatment option."

Using advanced technologies, the study examined the effects of CDKI-73 using an array of prostate cancer models, including patient tumor samples, which revealed not only the effectiveness of the inhibitor but also provided new insights into its mode of action.

"This study represents a significant step forward in understanding the role of CDK9 in aggressive prostate cancer," adds Associate Professor Selth. "Having said that, we still need to do a lot more work to fully understand the potential of CDK9 inhibitors and to deliver a new treatment for patients."

CDKI-73 is currently being investigated in Phase 2 clinical trials in patients with relapsed and therapy-resistant acute myeloid leukemia, an aggressive blood cancer.

"This study demonstrates that CDKI-73 is a promising candidate for treating solid tumors such as prostate cancer," says Professor Wang, who developed CDKI-73.

"Our proof-of-principle study is an important step towards future [clinical trials](#) and these findings will inform future studies in the use and efficacy of CDKI-73 as a [prostate cancer](#) treatment," adds Professor Wang.

**More information:** Razia Rahman et al, CDK9 inhibition inhibits multiple oncogenic transcriptional and epigenetic pathways in prostate cancer, *British Journal of Cancer* (2024). [DOI: 10.1038/s41416-024-02810-8](#)

Provided by Flinders University

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