Researchers discover new cancer target

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New research published today in the *Biochemical Journal* describes the discovery of a new cancer target.

PI3K is a name given to a family of enzymes that are involved in cell growth, proliferation, differentiation and many other cellular functions.

These enzymes are also implicated in many cancers and PI3K signalling is a target for treatments.

Now, researchers at Bart's Cancer Institute in London have discovered a previously unrecognized mechanism by which PI3K sustains the proliferation of cancer cells. It appears that PI3K modulates the concentration of spermidine, a polyamine involved in cellular metabolism.

Writing in the Biochemical Journal, the researchers explain that there are two biochemical pathways controlling each other's activities in a kind of feedback loop: that of the enzymes PI3K and ornithine decarboxylase. Restricting the action of both led to a dramatic shrinkage of tumours in xenograft models.

"Our work provides new insights into the intriguing interlink that exists between signalling and metabolic pathways and how these synergize in the development of cancers," said Dr Pedro Cutillas, of the Barts Cancer Institute, Queen Mary University of London, and one of the authors. "I hope this study will inspire new avenues in the exploration of cancer therapies that target metabolic and signalling pathways."

To aid in the dissemination of this important discovery, Portland Press Limited has made online access to this paper free for a limited period.

More information: Rejeeve, V. et al. Polyamine production is downstream and upstream of oncogenic PI3K signalling and contributes to tumour cell growth, *Biochemical Journal* (2013) 450 619–628. doi:10.1042/BJ20121525

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