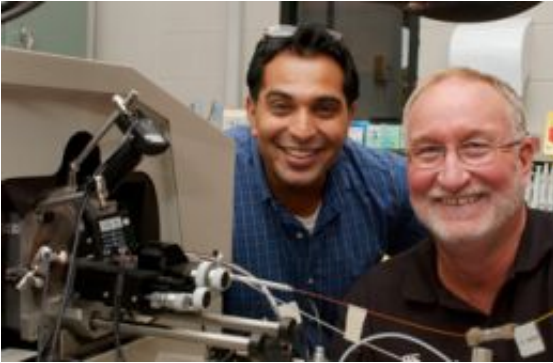


Net widens as more proteins implicated in cancer spread

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(PhysOrg.com) -- Authorities are on the lookout for 64 proteins believed to have been talking to well-known cancer kingpin urokinase plasminogen activator receptor (a.k.a uPAR).

Professor Mark Baker, of the Australian Proteome Analysis Facility at Macquarie University, says his research team's recent findings - published in the latest edition of the international Journal of Proteome Research - help take international researchers one step closer to understanding the chain of events in cells that leads to ovarian and colon cancer cells transforming from the indolent benign type to the considerably more nasty malignant form.

"Researchers have known for a while that uPAR, which helps cells migrate through the body, is heavily involved in a range of cancers because it regularly turns up in large numbers on the outside of many types of malignant tumours," Baker says.

"From the 20,300 or so proteins known to occur naturally in the human body, my colleagues Drs Xu and Saldanha have now been able to isolate about 50 that uPAR 'hangs around with' in or near the cell membrane when a colon cancer cell is malignant, and which it potentially recruits in order

to help change the normal law-abiding behaviour of healthy cells."

The proteins were identified using mass spectrometry because their cellular expression levels changed significantly (either up or down) when cell-surface uPAR was only suppressed by 40%. Not surprisingly, many of those suspect proteins have already been implicated by other researchers worldwide as being involved the regulation of tumour progression.

By mapping the sites of interaction between uPAR and other cell-surface proteins, and then using these sites as targets for new drugs that can stop the communication from the kingpin proteins, the Macquarie scientists hope to one day be able to control the spread of some types of malignant cancer.

Provided by Macquarie University

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