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## Tailor-made sugar jackets to stop cancerous growth

ANI [ WEDNESDAY, JANUARY 23, 2002 2:19:55 PM ]

**N**EW DELHI: Scientists have successfully manipulated sugar jackets of cancer cells to keep tumour cells dormant, an important step which can pave the way for development of drugs that attack cancer cells in a specific manner.

Substantial progress was made earlier in understanding proteins in the extracellular matrix (the web material that surrounds every cell) and their roles, leading to exciting new drugs like the anti-cancer endostatin, but insights into the sugars have lagged. That's because the sugars are more complex and have many more building blocks than DNA or proteins, making them more difficult to study.

However, a new study at the Massachusetts Institute of Technology, reported in the *Science Daily*, has shown for the first time that the sugar jackets of cancer cells can be tailored to inhibit tumours.

Scientists led by Associate Professor Ram Sasisekharan of the Division of Bioengineering and Environmental Health (BEH) probed the relationship between changes in tumour cells' sugar jackets and cancer. They wanted to find out if the sugars associated with different stages of cancer were directly responsible for tumour growth or simply byproducts, says a report in *Science Daily*.

"We were fascinated by the discovery that the tumour cell's sugar coat contains sugar sequences that can both promote and inhibit growth," said Sasisekharan.

The study concluded that it is possible that during cancer, tumour cells wear sugar jackets that enable them to either be dormant or rapidly grow and support tumour progression. Cancer could therefore depend on a kind of biological balancing act.

"tumours might be kept in check by the body's production of specific enzymes that in turn release sugar fragments that keep tumour cells dormant. Or, perhaps in response to pathophysiological changes, a tumour cell releases different enzymes that enable the tumour to grow more rapidly," Sasisekharan explained.

The overall work has implications for future cancer drugs. These findings suggest that the sugar coat worn by tumour cells, which varies according to tissue type, may provide a tissue-specific target for new anti-cancer

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