New treatment yields complete regression of a human cancer in mice

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A simple modification in an anti-cancer treatment currently in clinical trials substantially improves the drug's effectiveness and reduces side effects in experiments with laboratory mice, researchers are reporting in an article scheduled for the May 16 edition of ACS' *Bioconjugate Chemistry*. Enzon Pharmaceuticals' David Filpula and colleagues at the National Cancer Institute worked on SS1P, a so-called immunotoxin that targets and destroys cells producing the surface protein mesothelin.

Ovarian, pancreatic and malignant mesothelioma cells all produce abnormally large amounts of mesothelin and thus are targets for SS1P. In the new study, researchers modified SS1P with PEGylation, which involves attaching chains of polyethylene glycol (also known as PEG) to the molecule. PEGylation is a well-established process that is used in at least six protein-based pharmaceutical products currently on the market.

PEGylated SS1Ps had fewer side effects and were more effective in mice bearing human tumors than standard SS1P, the report states. A single dose of the modified SS1P resulted in complete regression of the mouse tumors, the first time that such an effect had been observed, the researchers said. PEGylation of SS1P and other immunotoxins may hold promise for use in cancer patients, as well, they added.

Source: ACS