PURDUE INNOVATES | Office of Technology Commercialization

A Chimeric EGF-Targeted Bacterial Toxin as Therapeutic Agent against Bladder Cancer

A highly efficient, targeted EGF-toxin strategy is available to treat superficial and invasive bladder cancer, applicable also to lung and skin cancers, and reduces required treatment time from hours to minutes.

Bladder cancer is the fourth most common cancer among men and eleventh among women. Bladder cancer has a high rate of recurrence post-surgery. Despite its obvious high impact on public health, the available therapies are still of limited efficacy. Instillation of therapeutics in the lumen of the bladder assures access to the tumor without affecting normal cells, but dilution of the therapeutic agent by urine flow and its elimination by periodic emptying of the bladder, greatly reduces the treatment efficacy. The market for new technologies related to novel therapeutics to support the treatment of such cancers includes pharmaceutical companies and cancer research centers.

Purdue University researchers have developed a novel strategy using an epidermal growth factor (EGF) targeted toxin, which can be used for elimination of both superficial and invasive bladder tumors. This is a highly efficient, targeted strategy that reduces treatment time from hours (current therapies) to minutes. Further, this agent can be administered by a pharmaceutically acceptable delivery system in the lumen of the bladder for treatment. In addition to being easily used against bladder cancer, this strategy is also applicable to other EGF receptor-dependent cancers such as lung and skin cancer.

Advantages:

-High efficacy and fast action

-Targets superficial and invasive bladder tumors

-EGF targeting and internalization of the toxin

Potential Applications:

-Bladder cancer treatment

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Category

Biotechnology & Life Sciences/Synthetic Biology & Genetic Engineering

Pharmaceuticals/Small Molecule Therapeutics

Pharmaceuticals/Drug Delivery & Formulations

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-Lung and Skin cancer treatment

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A Novel, Safe, Fast, Efficient Treatment for Her2-positive and Negative Bladder Cancer Utilizing an EGF-Anthrax Toxin Chimera. October 4, 2019.

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Intellectual Property:

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