

Promising Target in Cancer Therapy

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One key challenge in cancer treatment is identification of therapeutic agents which target only cancer cells. Generally, cancer therapies do not target a novel protein inside or outside of the cell, thus treatments also cause harm to healthy cells. To address this issue, Purdue researchers have found a receptor that is expressed in high quantities on cancer cells and minimally on healthy cells, known as Cholecystokinin-B/Gastrin Receptor. Previously, this receptor has been utilized in imaging and blocking experiments, but the peptide compounds used in these experiments suffer from difficulties of introduction to the body and sequestration in the kidneys.

Purdue Researchers have developed a small molecule antagonist that specifically targets this receptor. This small molecule can be used to attach imaging tags, but more importantly can be used to attach a chemotherapy agent. The difference in ratios of expression of the receptor on cancer vs. healthy cells means that the chemotherapy drug is statistically more likely to enter the cancer cell. The small molecule antagonist displays advantages over previous peptide-based therapies in that small molecule can be delivered to the site of cancer via pill form, and it is more likely to be metabolized in the body and not sequestered in the kidneys.

Advantages:

- Statistically likely to target cancer cells
- Small molecule is more efficiently used by the body than previous peptide designs
- CCKBR target is found in higher ratios on cancer cells than healthy cells

People:

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Intellectual Property:

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