G-Quadruplex Targeting Small Molecules for the Treatment of Castration Resistant Prostate Cancer and Hsv-1

Title: Targeting the Androgen Receptor G-Quadruplex

Invention: This technology consists of a new class of small-molecules that target G-quadruplex formation. These compounds have the potential to treat a wide variety of diseases including prostate cancer. In particular, these compounds are aimed at helping individuals who have developed a resistance to androgen-deprivation therapies (ADT). While most ADT therapeutics utilize androgen receptor (AR) antagonists or androgen synthesis inhibitors, this technology utilizes specific compounds that work to reduce AR expression, which could potentially help ADT-resistant patients by decreasing overall resistance to begin with.

Additional experiments have also demonstrated that these compounds also display significant anti-herpes simplex virus type 1 (anti-HSV-1) activity.

Background: Long-term prostate cancer control is currently done through the use of ADT. Unfortunately, ADT can ultimately lead to resistance to this therapy, which quickly progresses into castration-resistant prostate cancer (CRPC). There are no solutions for individuals who develop a resistance to ADT, and with no solutions, individuals struggle with the ability to maintain the treatment of their cancer. The technology proposed here provides a solution to current ADT-resistant patients and ultimately allows prostate cancer patients to maintain long term cancer treatment.

Applications:

- Prostate cancer therapy
- Therapy for ADT-resistant patients
- Treatment of HSV-1

Contact Kaitlyn Norman
Advantages:

- Increases specificity
- Reduces toxicity of G-quadruplex binding drugs
- Decreases the expression of AR

Licensing Manager:
Kaitlyn Norman-Powers
KaitlynN@tla.arizona.edu
(520) 621-9907

Inventors
Sara Richter
Kui Wu
Postdoctoral Research Associate I, Pharmacology & Toxicology
Vijay Gokhale
Senior Research Scientist, BIO5
Laurence Hurley
Professor, Pharmacology & Toxicology
Cynthia Miranti
Professor, Cellular & Molecular Medicine
Elsa Reyes Reyes
Research Assistant Professor, Medicine