Novel Response Predictor for Prostate Cancer Therapy

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Technology description

Researchers at the University of Nebraska—Lincoln have identified a novel biomarker of prostate cancer progression.

Technology Description

Androgen Deprivation therapy (ADT) is commonly prescribed to intermediate/high risk prostate cancer patients. However, a significant portion of patients stop responding to ADT and develop castration-resistant prostate cancer (CRPC). The enzyme UDP-Glucose Dehydrogenase (UGDH) is involved in the generation of precursors that drive the removal of androgens. University of Nebraska—Lincoln researchers, Melanie Simpson and Joe Barycki, have identified UGDH as a relevant biomarker for identifying patients that are likely to fail ADT, potentially leading to altered treatment decisions.

Inventive Feature(s)

UGDH was quantified in a microarray of human core biopsy samples and the differential expression of UGDH in the tumor relative to the surrounding tissue was indicative of tumor response to therapy.

Publication(s)

Wei, Q., Galbenus, R., Raza, A., Cerny, R. L., and Simpson, M. A. (2009) Androgen-Stimulated UDP-Glucose Dehydrogenase Expression Limits Prostate Androgen Availability without Impacting Hyaluronan Levels .Cancer Research69, 2332-2339

Application area

• Prognostic diagnostic - UGDH expression pattern can be used to predict a patient’ s response to ADT

• Companion diagnostic - UGDH expression pattern can be used to select a patient population that will respond to UGDH inhibitors (Tech 2303)

Advantages

• Simple – fits well within the current clinical workflow in a pathology lab.
• Informative – can be used to predict prognosis of patients as well as select a patient population for a novel therapy.

Institution

University of Nebraska, Lincoln

Inventors

Joseph Barycki
Melanie Simpson