Fred Hutch Cancer Center

Therapeutic peptide and biomarkers for castration-resistant prostate cancer (CRPC)

Business Opportunity

Exclusive license
Sponsored research

Technology Type

Biomarker
Therapeutic

State of Development

Preclinical in vivo

Patent Information

Provisional patent application file

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Tech ID

23-205

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Brief Description

Synthetic peptide targeting PRAC1 has been developed for the treatment of CRPC.

Technology Overview

Prostate cancer is an androgen dependent tumor, and the androgen receptor (AR) drives numerous mechanisms involved in disease progression. The standard therapy for metastatic PC involves various pharmacological approaches that inhibit the AR signaling axis. Despite initial profound responses to androgen deprivation therapies, most patients progress to castration-resistant prostate cancer (CRPC). Highly potent second-generation AR signaling inhibitors (ARSI), such as abiraterone acetate and enzalutamide, that were developed to overcome this resistance have shown improvements in outcomes, but essentially all patients develop resistance to these agents. Much of the mortality associated with advanced PC can be attributed to resistance to ARSI. Dr. Michael Haffner and his collaborator have identified PRAC1 as a novel intra-cellular target that could be exploited for the treatment of prostate cancer. Additionally, synthetic peptide targeting PRAC1 has been developed for the treatment of castration-resistant prostate cancer (CRPC). PRAC1 could also be used as a biomarker to predict treatment outcome.

Applications

- Biomarker to predict treatment outcome for hormonal therapy
- Synthetic PRAC1 peptide as a therapeutic candidate for CRPC

Advantages

- Synthetic PRAC1 peptide is optimized to be cell penetrable
- In vivo studies in xenograft models show tumor suppression

Market Overview

- GlobalData forecasts the PC market to reach $12.8B in 2028. US has the largest market share and is expected to be $8 in 2028. AR-directed therapies make up the largest proportion of this market segment.