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Methods for Treating Castration-Resistant Prostate Cancer

Combination of Enzalutamide and ACAT1 inhibitor overcomes drug resistance in castration-resistant prostate cancer.

Researchers at Purdue University have discovered a new method of treating castration resistant prostate cancer (CRPC) using combination drug therapy. Enzalutamide (EZ) is a FDA approved, non-steroidal anti-androgen drug for management of CRPC; however, patients develop resistance to the drug in a short period of time. Another strategy of targeting CRPC is to inhibit enzymes involved in cholesterol metabolism, since cholesterol is a precursor to androgen and its metabolism is dysregulated in prostate cancer.

Purdue researchers found that a combination treatment of EZ and inhibitor of acyl-Coenzyme A:cholesterol acyltransferase (ACAT1) sensitized EZ-resistant CRPC cells to EZ treatment and reduced cancer cell colony formation and cell proliferation more than either drug alone.

Technology Validation: Intraperitoneal injection of the combination therapy of EZ & ACAT1 inhibitor showed greater anti-cancer effects and reduced xenograft tumor volume in nude mice derived from EZ-resistant CRPC cell lines compared to single treatments of EZ or ACAT1 inhibitor alone

Advantages

- Increased sensitivity of drug-resistant CRPC tumors to approved prostate cancer drug, EZ therapy

- Combination therapy has greater anti-cancer potential than single treatment of EZ or ACAT1 inhibitor

Applications

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Category
Pharmaceuticals/Drug Discovery & Development

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View online

- CRPC treatment

- Prostate cancer treatment

Related Publication: Modulation of Cholesterol Metabolism Improves Response to Enzalutamide Treatment in Prostate Cancer

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