Cancer Science-2013
OMICS Group Conferences
Accelerating Scientific Discovery
3rd World Congress on
Cancer Science & Therapy
October 21-23, 2013 DoubleTree by Hilton Hotel San Francisco Airport, USA

ONC1-13B - new effective antiandrogen for the treatment of prostate and breast cancer

Ruben N. Karapetian
Chemical Diversity Research Institute, Russia

Abstract

Introduction: It was shown that inhibition of androgen receptor (AR) activity could be an effective approach for the treatment not only prostate but also breast cancers. Zytiga and Xtandi, new drugs targeting androgen-dependent axis and approved for the treatment of prostate cancer, are now in clinical trials for the treatment of breast cancer. ONC1-13B developed by AllaChem is a new promising antiandrogen demonstrating high efficacy in preclinical models of prostate and breast cancer, approved for the clinical trials. Its mechanism of action is similar to Xtandi, it prevents binding of androgens to the AR, androgen-stimulated AR nuclear translocation and coactivator complex formation.

Methods: Prostate cancer LnCAP and ER+/AR+ breast cancer MCF7 cells were implanted to SCID mice. Tumor bearing mice were treated with ONC1-13B, Xtandi and Bicalutamide to determine anticancer activity.

Results: ONC1-13B inhibited DHT-stimulated PSA expression and proliferation of LnCAP cells *in vitro* more efficiently than Xtandi and ARN-509 (Aragon Pharmaceuticals, Phase II). In prostate cancer xenograft model ONC1-13B inhibited tumor growth and PSA expression. Activity of ONC1-13B, calculated per unit of plasma concentration, was higher than that of Xtandi. Interestingly, ONC1-13B inhibited also estradiol-stimulated growth of ER+/AR+ MCF7 xenografts despite it doesn`t bind ER.

Conclusion: Together with low CYP3A induction potential and low GABA-related seizure development risk our data suggests that ONC1-13B may have therapeutic efficacy in prostate and AR+ breast cancers. It can also be a component of the combination therapy with other anticancer drugs, potentially increasing overall efficacy.