

RNA-seq Reveals Novel Targets of Withaferin A in Prostate Cancer Cells

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Background

Prostate cancer is a leading cause of cancer-related mortality in American men. Chemoprevention of prostate cancer remains appealing for decreasing the morbidity and mortality associated with this disease. Withaferin A (WA) is a promising phytochemical exhibiting in vitro and in vivo anticancer activities against prostate and other cancers, but the mechanism of its action is not fully understood. In this study, RNA-seq analysis were performed using 22Rv1 human prostate cancer cell line to identify mechanistic targets of WA.

Research Pipeline

Sample Selection	22Rv1 human prostate cancer cell lines before and after treatment with WA
Library Preparation	mRNA library
Sequencing Strategy	Novaseq6000, PE150
Bioinformatics Analysis	Differential gene expression analysis, Enrichment analysis

Reference

SH Kim, ER Hahm, KB.Singh, *et al.* RNA-seq reveals novel mechanistic targets of withaferin A in prostate cancer cells. *Carcinogenesis*. 2020,1-12.

Novogene Powered Publications

Year	Journal	Title
2019	<i>Cell Host & Microbe</i>	Drosophila histone demethylase KDM5 regulates social behavior through immune control and gut microbiota maintenance
2019	<i>Nature communications</i>	Hematopoietic PBX-interacting protein mediates cartilage degeneration during the pathogenesis of osteoarthritis
2019	<i>Nature Communications</i>	Therapeutic role of miR-19a/19b in cardiac regeneration and protection from myocardial infarction
2019	<i>Science Advances</i>	The prostate cancer risk variant rs55958994 regulates multiple gene expression through extreme long-range chromatin interaction to control tumor progression
2019	<i>New Phytologist</i>	Diacylglycerol kinase and associated lipid mediators modulate rice root architecture
2019	<i>Environmental Science & Technology</i>	Study of the persistence of the phytotoxicity induced by graphene oxide quantum dots and of the specific molecular mechanisms by integrating omics and regular analyses
2018	<i>Nature communications</i>	Armadillo repeat containing 12 promotes neuroblastoma progression through interaction with retinoblastoma binding protein 4
2018	<i>cell</i>	Targeting epigenetic crosstalk as a therapeutic strategy for EZH2-aberrant solid tumors
2018	<i>Cancer research</i>	E6 protein expressed by high-risk HPV activates super-enhancers of the <i>EGFR</i> and <i>c-MET</i> oncogenes by destabilizing the histone demethylase KDM5C

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