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Title

Analyzing gene expression in androgen resistant prostate cancer

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The data associated with this publication are not available for this reason: N/A

Analyzing gene expression in androgen resistant prostate cancer

Joshua Stefanson¹, Jinge Zhao, Allen Gao M.D., Ph.D.¹

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Introduction

Prostate cancer is the 2nd leading cause of cancer related deaths in men the USA. Although anti-androgen therapies have prevailed as treatments, resistance to anti-androgen therapies leads to metastasis resulting in high mortality.



Results

Abiraterone Resistant vs C4-2B

Genes included in the leading-edge subset

- ADH
- MVK
- GSTM2
- SEMA3B

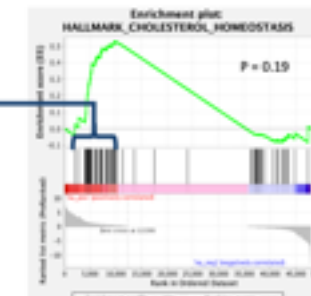
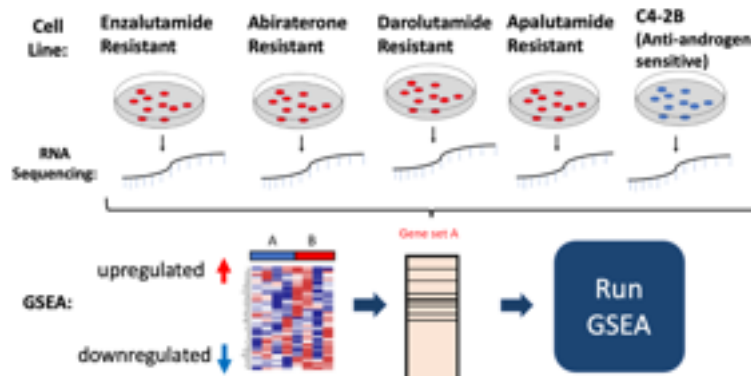


Fig 1. Enrichment plot: HALLMARK_CHOLESTEROL_HOMEOSTASIS Profile of the Running ES Score & Positions of GeneSet Members on the Rank Ordered List

Conclusion

- Genes involved in cholesterol homeostasis may be enriched in abiraterone-resistant prostate cancer cell lines
- SEMA3B is a gene of interest as it was significantly enriched in multiple prostate cancer resistant cell lines
- Further studies to analyze this gene's role in prostate cancer remains to be studied

Design



Results

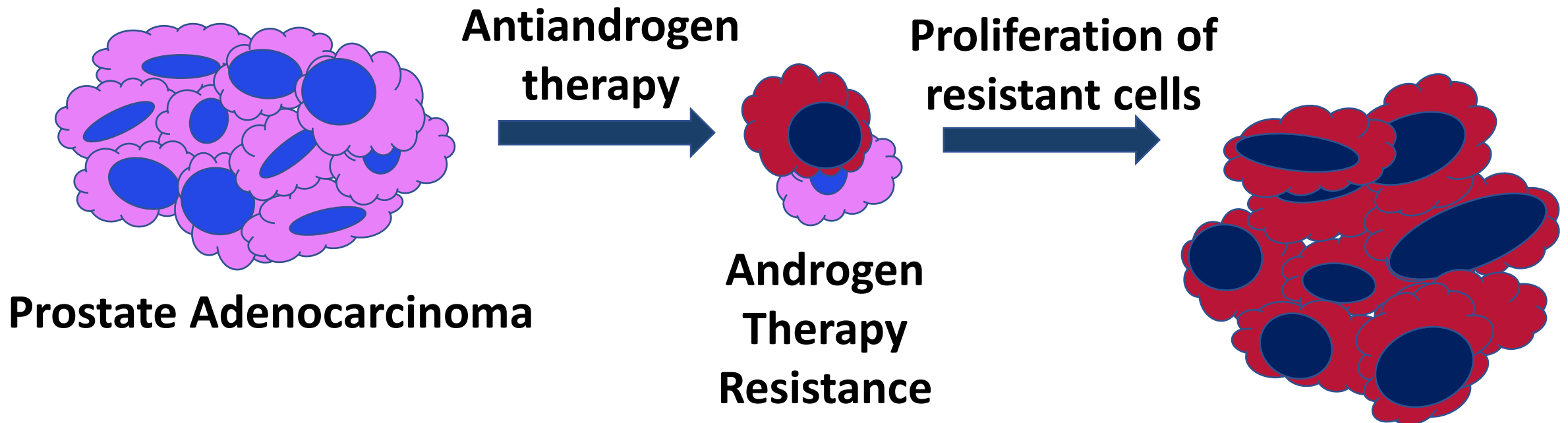
Gene	Pathway	Fold Change (C42B vs. Resistant Cell Line)
GSTM2	Glutathione pathway (glutathione S-transferase mu 2)	MDVR: 1.3196 p = 2.45e-18
		Abir: 1.4645 p = 0.683
		ApaR: 0.4803 p = 1
		DaroR: 1.4827 p = 0.422
SEMA3B	Glycoprotein with variety of functions (collagens)	MDVR: 1.1854 p = 0.103
		Abir: 1.5067 p = 0.028
		ApaR: 1.5396 p = 0.022
		DaroR: 1.0981 p = 0.204
MVK	Enzyme involved in cholesterol synthesis (Mevlonate kinase)	MDVR: 1.3333 p = 1
		Abir: 0.8817 p = 0.467
		ApaR: 0.4410 p = 1
		DaroR: 1.2058 p = 0.27
ADH4	Enzyme involved in alcohol metabolism (alcohol dehydrogenase)	MDVR: 0 p = 1
		Abir: 0.1815 p = 1
		ApaR: 0.1888 p = 1
		DaroR: 0 p = 1

Acknowledgements

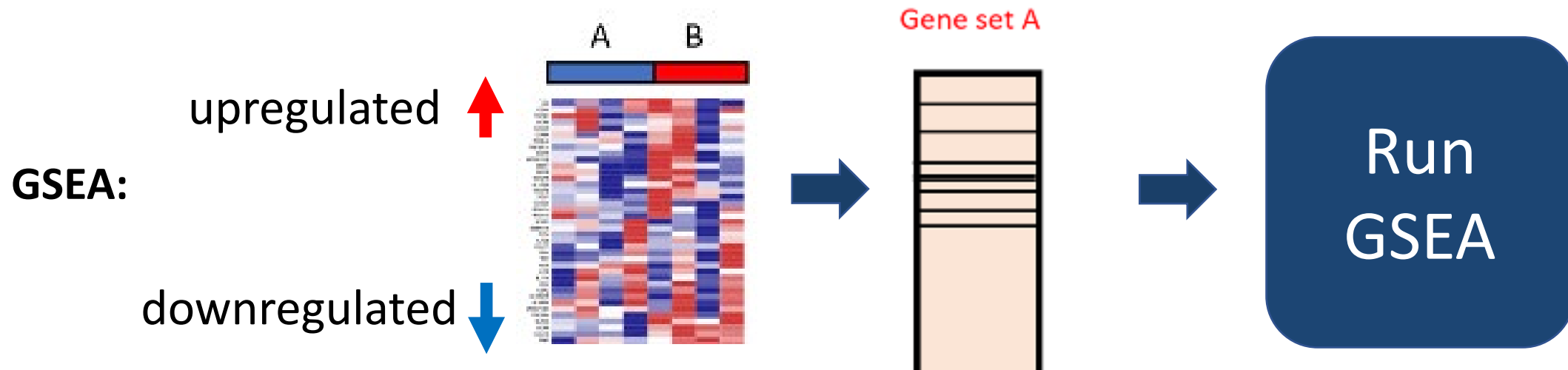
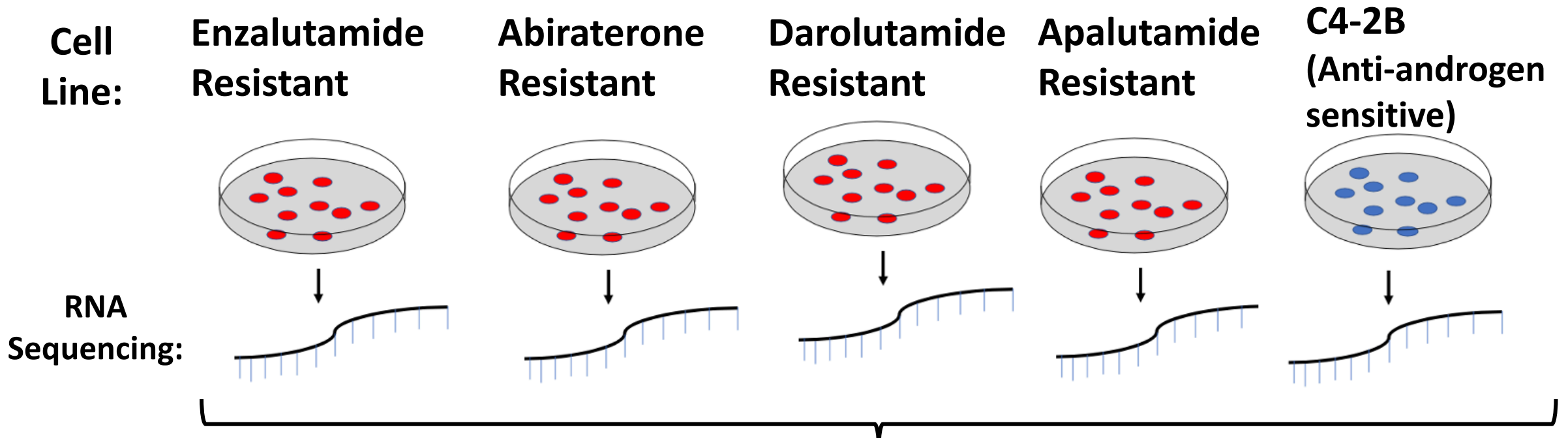
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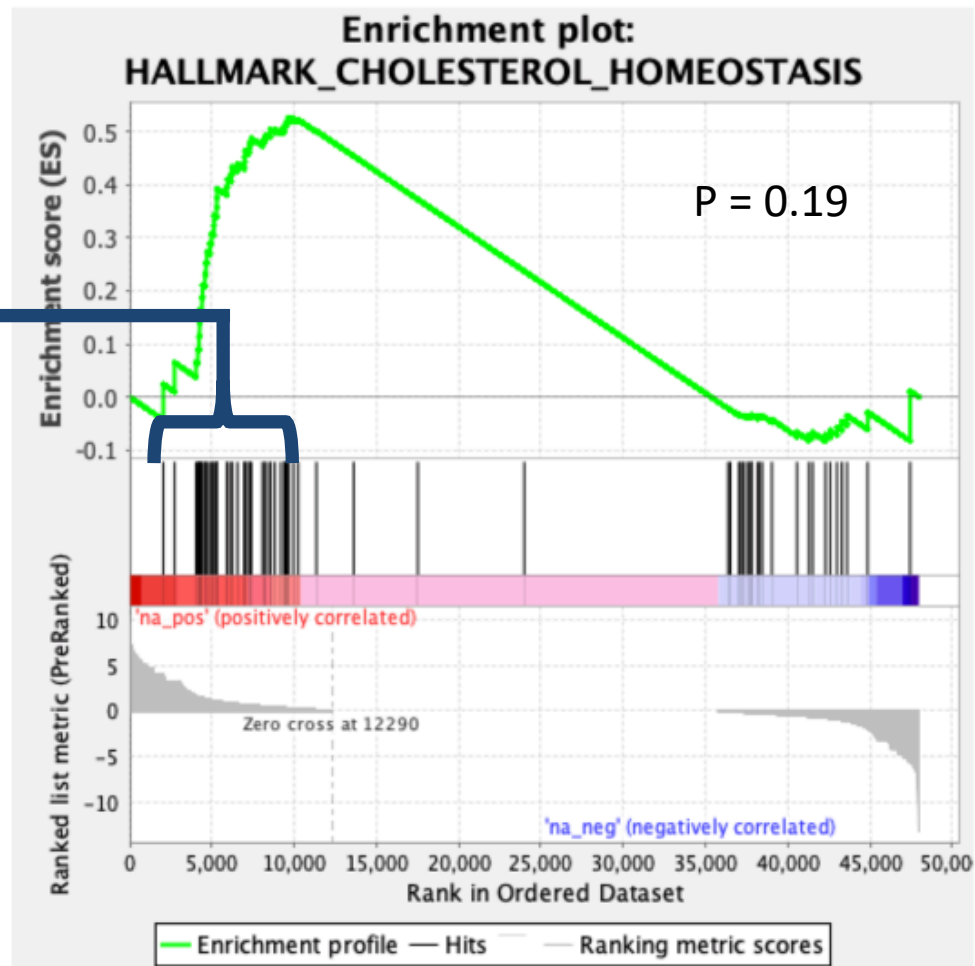


Fig 1: Enrichment plot: HALLMARK_CHOLESTEROL_HOMEOSTASIS
Profile of the Running ES Score & Positions of GeneSet Members on the Rank Ordered List

Results

Gene	Pathway	Fold Change (C42B vs. Resistant Cell Line)	
GSTM2	Glutathione pathway (glutathione S-transferase mu 2)	MDVR: 5.9196	p = 2.45e-18
		AbiR: 1.4645	p = 0.683
		ApaR: 0.4803	p = 1
		DaroR: -5.6877	p = 0.422
SEMA3B	Glycoprotein with variety of functions (collapsins)	MDVR: 1.1854	p = 0.103
		AbiR: 1.5067	p = 0.028
		ApaR: 1.5396	p = 0.022
		DaroR: 1.0981	p = 0.204
MVK	Enzyme involved in cholesterol synthesis (Melavonate kinase)	MDVR: 0.52155	p = 1
		AbiR: 0.88337	p = 0.467
		ApaR: 0.44162	p = 1
		DaroR: 1.0034	p = 0.27
ADH4	Enzyme involved in alcohol metabolism (alcohol dehydrogenase)	MDVR: 0	p = 1
		AbiR: 3.1615	p = 1
		ApaR: -5.13E-15	p = 1
		DaroR: 0	p = 1

Conclusion

- Genes involved in cholesterol homeostasis may be enriched in abiraterone-resistant prostate cancer cell lines
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