

**Table S1.** Genes in the RRM2 signature and derived sub-signatures. The list of genes that comprise each signature.

RRM2 signature <sup>(a)</sup>		RRM2/PCS1 <sup>(b)</sup>	PCS1/PAM50 <sup>(c)</sup>	RRM2/PCS1/ PAM50 <sup>(d)</sup>	RRM2/CTCs <sup>(e)</sup>
126-gene panel		50-gene panel	14-gene panel	12-gene panel	11-gene panel
<i>ANLN</i>	<i>KIF18B</i>	<i>ANLN</i>	<i>ANLN</i>	<i>ANLN</i>	<i>AURKB</i>
<i>ARL6IP1</i>	<i>KIF20A</i>	<i>AURKA</i>	<i>BIRC5</i>	<i>BIRC5</i>	<i>CCNB2</i>
<i>ASF1B</i>	<i>KIF20B</i>	<i>BIRC5</i>	<i>CCNB1</i>	<i>CCNB1</i>	<i>CDKN3</i>
<i>ATAD2</i>	<i>KIF23</i>	<i>BUB1</i>	<i>CDC20</i>	<i>CDC20</i>	<i>CENPF</i>
<i>ATAD5</i>	<i>KIF2C</i>	<i>BUB1B</i>	<i>CDC6</i>	<i>CDC6</i>	<i>FANCI</i>
<i>AUNIP</i>	<i>KIF4A</i>	<i>CCNA2</i>	<i>CENPF</i>	<i>CENPF</i>	<i>KIF11</i>
<i>AURKA</i>	<i>KPNA2</i>	<i>CCNB1</i>	<i>CEP55</i>	<i>CEP55</i>	<i>KIF2C</i>
<i>AURKB</i>	<i>MAD2L1</i>	<i>CCNB2</i>	<i>KIF2C</i>	<i>KIF2C</i>	<i>MIS18A</i>
<i>BIRC5</i>	<i>MELK</i>	<i>CDC20</i>	<i>MELK</i>	<i>MELK</i>	<i>MKI67</i>
<i>BLM</i>	<i>MIS18A</i>	<i>CDC6</i>	<i>MKI67</i>	<i>MKI67</i>	<i>PIIF</i>
<i>BORA</i>	<i>MIS18BP1</i>	<i>CDCA5</i>	<i>PTTG1</i>	<i>PTTG1</i>	<i>TPX2</i>
<i>BUB1</i>	<i>MKI67</i>	<i>CDCA8</i>	<i>TYMS</i>	<i>UBE2T</i>	
<i>BUB1B</i>	<i>MNS1</i>	<i>CDK1</i>	<i>UBE2C</i>		
<i>CCNA2</i>	<i>MYBL2</i>	<i>CDKN3</i>	<i>UBE2T</i>		
<i>CCNB1</i>	<i>NCAPG</i>	<i>CENPE</i>			
<i>CCNB2</i>	<i>NCAPG2</i>	<i>CENPF</i>			
<i>CCNE1</i>	<i>NCAPH</i>	<i>CENPM</i>			
<i>CDC20</i>	<i>NUF2</i>	<i>CEP55</i>			
<i>CDC6</i>	<i>NUSAP1</i>	<i>CIT</i>			
<i>CDCA3</i>	<i>ORC1</i>	<i>CKS2</i>			
<i>CDCA5</i>	<i>PARP2</i>	<i>EZH2</i>			
<i>CDCA8</i>	<i>PBK</i>	<i>HJURP</i>			
<i>CDK1</i>	<i>PCLAF</i>	<i>HMGB2</i>			
<i>CDKN3</i>	<i>PIF1</i>	<i>HMMR</i>			
<i>CDT1</i>	<i>PIGA</i>	<i>KIF11</i>			
<i>CENPE</i>	<i>PIMREG</i>	<i>KIF15</i>			
<i>CENPF</i>	<i>PKMYT1</i>	<i>KIF20A</i>			
<i>CENPH</i>	<i>PLK1</i>	<i>KIF23</i>			
<i>CENPM</i>	<i>PLK4</i>	<i>KIF2C</i>			
<i>CENPP</i>	<i>POLQ</i>	<i>KIF4A</i>			
<i>CENPU</i>	<i>POT1</i>	<i>MELK</i>			
<i>CEP152</i>	<i>PIIF</i>	<i>MKI67</i>			
<i>CEP55</i>	<i>PRC1</i>	<i>NCAPG</i>			
<i>CIT</i>	<i>PSMC3IP</i>	<i>NCAPG2</i>			
<i>CKAP2</i>	<i>PSRC1</i>	<i>NUF2</i>			
<i>CKAP5</i>	<i>PTTG1</i>	<i>NUSAP1</i>			
<i>CKS1B</i>	<i>RAD51</i>	<i>PBK</i>			
<i>CKS2</i>	<i>RAD51AP1</i>	<i>PKMYT1</i>			
<i>CTSV</i>	<i>RAD54B</i>	<i>POLQ</i>			
<i>DBF4</i>	<i>RAD54L</i>	<i>PRC1</i>			
<i>DDIAS</i>	<i>RFC3</i>	<i>PTTG1</i>			
<i>DEPDC1</i>	<i>RM12</i>	<i>RAD54L</i>			
<i>DEPDC1B</i>	<i>SHCBP1</i>	<i>SPAG5</i>			
<i>DNA2</i>	<i>SKA1</i>	<i>STMN1</i>			
<i>DNMT3B</i>	<i>SKA3</i>	<i>TACC3</i>			
<i>DONSON</i>	<i>SPAG5</i>	<i>TK1</i>			
<i>DSCC1</i>	<i>SPC25</i>	<i>TOP2A</i>			
<i>EZH2</i>	<i>STIL</i>	<i>TPX2</i>			
<i>FAM72D</i>	<i>STMN1</i>	<i>UBE2T</i>			
<i>FAM83D</i>	<i>TACC3</i>	<i>ZWINT</i>			
<i>FANCD2</i>	<i>TK1</i>				
<i>FANCI</i>	<i>TOP2A</i>				
<i>GINS1</i>	<i>TPX2</i>				
<i>GINS2</i>	<i>TRIM59</i>				
<i>GPC2</i>	<i>TUBA1B</i>				
<i>GPSM2</i>	<i>UBE2S</i>				
<i>GTSE1</i>	<i>UBE2T</i>				
<i>HJURP</i>	<i>WDR62</i>				
<i>HMGB2</i>	<i>WEE1</i>				
<i>HMMR</i>	<i>ZGRF1</i>				
<i>INSIG1</i>	<i>ZNF273</i>				
<i>KIF11</i>	<i>ZNF695</i>				
<i>KIF15</i>	<i>ZWINT</i>				

- a. The RRM2 signature consists of 126 genes. It was created by intersecting upregulated genes in PC-3-RRM2 cells with genes with expression that was positively correlated with RRM2 overexpression in The Cancer Genome Atlas, Kumar, and Stand Up To Cancer/Prostate Cancer Foundation cohorts.
- b. 50-gene panel consists of common genes between the RRM2 signature and the PCS1 signature genes.
- c. 14-gene panel consists of genes shared by PCS1 subtype and PAM50 classifiers.
- d. 12-gene panel consists of common genes in the RRM2 signature, PCS1 signature, and PAM50 classifier.
- e. 11-gene panel consists of genes in the RRM2 signature and those upregulated in enzalutamide-resistant circulating tumor cells (CTCs). CTC expression data derived from single-cell RNA-seq profiling of CTCs from patients with prostate cancer (GEO: GSE67980).