

Supplementary Information

Additional file 1 CircRNA Identification Results Presentation (partial)

circRNA_ID	Chr	start	end	strand	full_length	spliced_length
hsa_circ_0005704	20	10556230	10560820	+	4590	211
hsa_circ_0002001	20	13559007	13580981	-	21974	272
hsa_circ_0004580	20	13559007	13587370	-	28363	393
hsa_circ_0059475	20	13580896	13630152	-	49256	562
hsa_circ_0006704	20	17952586	17954117	-	1531	246
hsa_circ_0009173	20	17956932	17961326	-	4393	4393

Continued Table CircRNA Identification Results Presentation

gene_id	feature	samples	Junction-read	non_junction_read	source_gene_name
ENSG00000149346;	exon:10556231-10556320,	LSM,MZX,WG,	5,4,40,31,14,4,11,12	4,4,11,7,3,8,2,7	SLX4IP
	exon:10557319-10557426,	WWC1,WXH,XA			
	exon:10560700-10560820	M,XZA,ZZH			
ENSG00000089123;	exon:13559008-13559114,	LSM,WWC1,W	6,9,17	97,78,84	TASP1
	exon:13569507-13569586,	WC2			
	exon:13580897-13580981				
ENSG00000089123;	exon:13559008-13559114,	LSM,WWC1,W	33,8,12,35,4,8,8,15	48,62,50,30,9,15,11,42	TASP1
	exon:13569507-13569586,	WC2,WXH,XAM			
	exon:13580897-13580981	,XW,XZA,ZZH			
ENSG00000089123;	exon:13580897-13580981	LCY	10	52	TASP1
ENSG00000089006;	exon:17953996-17954117	MZX	2	10	SNX5
ENSG00000089006;	exon:17961140-17961326	ZZH	2	2	SNX5

circRNA_ID: circRNA ID (2) Chr: chromosome number (3) start: start site of circRNA full length (4) end: stop site of circRNA full length (5) strand: positive and negative strand (6) full_length: circRNA full length (7) spliced_length (8) gene_id: circRNA source gene id (9) feature_id: circRNA splice information (for non-degenerate RNA libraries, this splice information may contain linear RNAs matching at this position) (10) samples: samples containing this circRNA (separated by commas) (11) junction_read: number of junction reads (order corresponds to samples) (12) non_junction_read: number of non-junction reads (order corresponds to samples) (13) source_gene_name: circRNA source gene name.

Additional file 2 Statistics of the number of differentially expressed circRNAs between groups

GROUP	DIFF	UP	DOWN
Focal progression vs. BPH	133	103	30
Focal progression vs. early restriction	63	36	27
Late metastasis vs. localized progression	106	37	69
Late metastasis vs BPH	131	82	49
Late metastasis vs early limitation	84	41	43
Early restriction vs BPH	88	62	26

Additional file 3 Results of the analysis of the top 5 most significantly differentially expressed circRNAs (partial)

Groups	UP	DOWN
	novel_circ_0009181novel_circ_0013897	hsa_circ_0005692 hsa_circ_0001722
Locally	hsa_circ_0000377 hsa_circ_0000417	hsa_circ_0002275 hsa_circ_0002496
progressive	hsa_circ_0000787 hsa_circ_0001673	hsa_circ_0003984 hsa_circ_0004872
vs. BPH	hsa_circ_0002064 hsa_circ_0002079	hsa_circ_0004888 hsa_circ_0005199
	hsa_circ_0002115 hsa_circ_0002160	hsa_circ_0007456 hsa_circ_0007884
	hsa_circ_0001944 hsa_circ_0002079	hsa_circ_0000646 hsa_circ_0002059
Locally	hsa_circ_0003247 hsa_circ_0003327	hsa_circ_0003027 hsa_circ_0003115
progressive vs	hsa_circ_0003438 hsa_circ_0004535	hsa_circ_0003451 hsa_circ_0003842
early limited	hsa_circ_0004594 hsa_circ_0006219	hsa_circ_0005692 hsa_circ_0005857
	hsa_circ_0006646 hsa_circ_0006747	hsa_circ_0006281 hsa_circ_0007606
	hsa_circ_0000302 hsa_circ_0000612	hsa_circ_0000371 hsa_circ_0001630
Late	hsa_circ_0001292 hsa_circ_0001730	hsa_circ_0002382 hsa_circ_0002762
metastasis vs	hsa_circ_0002554 hsa_circ_0002748	hsa_circ_0002826 hsa_circ_0003131
localized	hsa_circ_0003027 hsa_circ_0003113	hsa_circ_0003247 hsa_circ_0003340
progression	hsa_circ_0003962 hsa_circ_0004047	hsa_circ_0003915 hsa_circ_0004062
	hsa_circ_0004961 hsa_circ_0000295	hsa_circ_0005692 novel_circ_0014897
Late	hsa_circ_0000343 hsa_circ_0001292	hsa_circ_0000495 hsa_circ_0001289
metastasis vs	hsa_circ_0001555 hsa_circ_0001726	hsa_circ_0002074 hsa_circ_0002275
BPH	hsa_circ_0001730 hsa_circ_0002554	hsa_circ_0002321 hsa_circ_0002496
	hsa_circ_0003522 hsa_circ_0003574	hsa_circ_0002762 hsa_circ_0003020
	hsa_circ_0000234 hsa_circ_0000439	hsa_circ_0000073 hsa_circ_0000137
Late	hsa_circ_0001555 hsa_circ_0001726	hsa_circ_0000640 hsa_circ_0002844
metastasis vs	hsa_circ_0001730 hsa_circ_0002078	hsa_circ_0003175 hsa_circ_0003653
early	hsa_circ_0002554 hsa_circ_0002883	hsa_circ_0003842 hsa_circ_0005395
limitation	hsa_circ_0003307 hsa_circ_0003522	hsa_circ_0005692 hsa_circ_0006358

	novel_circ_0013897 hsa_circ_0000640	hsa_circ_0000105 hsa_circ_0000234
Early	hsa_circ_0000958 hsa_circ_0001292	hsa_circ_0000495 hsa_circ_0001725
restriction vs	hsa_circ_0001673 hsa_circ_0002162	hsa_circ_0004945 hsa_circ_0007717
BPH	hsa_circ_0002607 hsa_circ_0003430	hsa_circ_0008775 hsa_circ_0022168
	hsa_circ_0003653 hsa_circ_0003700	hsa_circ_0024657 hsa_circ_0035958

Additional file 4CircRNAs common to all groups

group	quantity	circRNA id
3vs1 3vs2 4vs1 4vs2	1	hsa_circ_0005692
3vs2 4vs1 4vs2	18	hsa_circ_0002554 hsa_circ_0003522 novel_circ_0002791 hsa_circ_0001555 novel_circ_0011628 hsa_circ_0003962 novel_circ_0006521 hsa_circ_0053028 hsa_circ_0001726 hsa_circ_0003574 novel_circ_0001897 novel_circ_0006793 hsa_circ_0004027 hsa_circ_0071037 novel_circ_0012705 hsa_circ_0001730 hsa_circ_0006213 novel_circ_0012508
3vs1 3vs2 4vs2	4	novel_circ_0004659 novel_circ_0009186 hsa_circ_0072697 hsa_circ_0079136
3vs1 3vs2 4vs1	1	hsa_circ_0005692

1 indicates the prostate enlargement group

2 indicates early limited group

3 indicates localized progression group

4 indicates advanced metastasis group