

**Supplementary Materials:**

Table S1. The primers used in PA embryos for qRT-PCR

Name of primer	Gene symbol	Sequence of primer (5'-3')	Tm (°C)	Fragment size (bp)
18S -F	18S ribosomal RNA	GGACCTGACCGACTACCTCA	58	134
18S -R		CCATCTCCTGCTCGAAGTCC		
SOX2 -F	SRY-Box Transcription Factor 2	ACCAGAAGAACAGCCCAG	55	159
SOX2 -R		CCGTCTCCGACAAAAGTT		
OCT4 -F	POU Class 5 Homeobox 1	GTGTTTCAGCCAAACGACCAT	55	200
OCT4 -R		TTGCCTCTCACTCGGTTCTC		
KLF4 -F	Kruppel Like Factor 4	TCCCACCGCTCCATTAC	55	162
KLF4 -R		ATGAGAACTCTTCGTGTAGG		
BCL-XL -F	BCL2 Like 1	ACTGAATCAGAAGCGGAAAC	60	249
BCL-XL -R		AAAGCTCTGATACGCTGTCC		
BAX -F	BCL2 Associated X, Apoptosis Regulator	CTAGAACCTAGCAGCACCAT	60	151
BAX -R		CGATCTTGGTGAAGTACTC		

Table S2. The primers used in IVF blastocysts for qRT-PCR

Name of primer	Gene symbol	Sequence of primer (5'-3')	Tm (°C)	Fragment size (bp)
18S -F	18S ribosomal RNA	GGACCTGACCGACTACCTCA	58	134
18S -R		CCATCTCCTGCTCGAAGTCC		
SOX2 -F	SRY-Box Transcription Factor 2	TCCATGACCAGCTCGCAGACC	55	121
SOX2 -R		TCGCCTCGGACTTGACCACT		
OCT4 -F	POU Class 5 Homeobox 1	GTGTTTCAGCCAAACGACCAT	55	200
OCT4 -R		TTGCCTCTCACTCGGTTCTC		
KLF4 -F	Kruppel Like Factor 4	GACCTACTTACTCGCCTTGCT	55	199
KLF4 -R		CCCGAACCCCAGTCAACGAA		
BCL-XL -F	BCL2 Like 1	ACTGAATCAGAAGCGGAAAC	60	249
BCL-XL -R		AAAGCTCTGATACGCTGTCC		
CASP3 -F	Caspase 3	GGCGTGTGAGAAAATACCAG	55	174
CASP3 -R		TTAACCCGAGTAAGAATGTG		

Table S3. GO terms significantly ( $q$ -value < 0.05) enriched from DEGs between early and late cleavage embryos of PA.

GO Terms	GO Branch	Term Name	$p$ -value	$q$ -value
GO:0003676	molecular function	nucleic acid binding	2.74612E-05	0.027324

GO:0044424	cellular components	intracellular part	1.06632E-10	6.86E-08
GO:0043226	cellular components	organelle	2.69831E-05	0.002892
GO:0043229	cellular components	intracellular organelle	2.18552E-06	0.000468
	cellular components	membrane-bounded		
GO:0043227		organelle	2.47549E-05	0.002892
GO:0043231	cellular components	intracellular membrane-bounded organelle	1.85939E-06	0.000468
GO:0005634	cellular components	nucleus	2.56679E-05	0.002892

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