

Supplementary Materials: Effects of Gold Nanorods on Imprinted Genes Expression in TM-4 Sertoli Cells

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Table S1. List of primers used to test the expression of the 44 imprinted genes and the reference genes Gapdh and U6.

Gene	Primer-F (5'-3')	Primer-R (5'-3')
<i>Ano1</i>	CTGATGCCGAGTGCAAGTATG	AGGGCCTCTTGTGATGGTACA
<i>Cdkn1c</i>	CCCATCTAGCTTGCAGTCTCTT	CAGACGGCTCAGGAACCATT
<i>Ddc</i>	TGGGGACCACAACATGCTG	TCAGGGCAGATGAATGCACTG
<i>Dlk1</i>	AGCTGCACCCCAACC	CTGCTGGCGCAGTTGGTC
<i>Gnas</i>	TGCAAGGAGCAACAGCGAT	GCGGCCACAATGGTTTCAAT
<i>Gpr1</i>	GCTGGGAGTTGTTCAGTGGG	GACGATGGCATTTCCTGGAAT
<i>Grb10</i>	AACCCAGCTTTTGCAGGAA	TCAGGGAGAAGATGTTGCTGT
<i>Gtl2</i>	GTTTCTGGACTGTGGGCTGT	CAACAGCAACAAAACCTCAGAACATTCA
<i>H19</i>	GCACCTTGGACATCTGGAGT	TTCTTTCCAGCCCTAGCTCA
<i>Hymai</i>	TGCCTTTCAGTGTGAACCA	TGCATCCCTAAACAACAGCTT
<i>Igf2</i>	AGCCGTGGCATCGTTGAG	GACTGCTTCCAGGTGTCATATTG
<i>Igf2as</i>	TCTTTGCCCTCTTTCGTCTC	CTCCAGGTGCTTCCGTCTAG
<i>Igf2r</i>	CTGCCGCTATGAAATTGAGTGG	CGCCGCTCAGAGAACAAGTT
<i>Inpp5f V2</i>	ACTGAACCTGAGCAGATTTC	CCACCCCACTCCAAAAGGTT
<i>Kcnk9</i>	GATGAAACGCCGGAAGTC	GTGTTCCGGCTTTGGCAGT
<i>Kcnq1</i>	GCGTCTCCATCTACAGCACG	GAAGTGGTAAACGAAGCATTTC
<i>Klf14</i>	TTTCCCTCACACTTGATTACCC	AGCGAGGGAGGGACTAAGAT
<i>Magel2</i>	GGGCTCCGCTAAATCATTG	CCCCTGCGGTCTATAGAAGA
<i>Magi2</i>	GGACTAGCAGGTTACGAA	GCTCCGACGTACGGAAACT
<i>Mest</i>	TGACCACATTAGCCACTATCCA	CCTGCTGGCTTCTCCTATAACA
<i>Mir296</i>	ACACTCCAGCTGGGAGGGCCCCCTCAA	CTCAACTGGTGTCTGAGTTCGGCAATTCAGTTGAGACAGGATT
<i>Mir298</i>	ACACTCCAGCTGGGAGCAGAAGCAGGGAGGTT	CTCAACTGGTGTCTGAGTTCGGCAATTCAGTTGAGTGGGAGAA

Table S1. Cont.

Gene	Primer-F (5'-3')	Primer-R (5'-3')
<i>Mkrn3</i>	GACCTTCCCGTCTGTGAGC	ATGTGGCAGGGCTGAATCT
<i>Nap1l5</i>	TTATCGAGAGCCTGCCTAATTCG	GCTTCTATCTTATCGCATCGCTT
<i>Ndn</i>	CTGATGATGTGTGTTGGGGTA	GGCTTTGCTGGTGACTTCTT
<i>Nespas</i>	ACTGAACCTGAGCAGATTTCGA	CCACCCCACTCCAAAAGGTT
<i>Nnat</i>	GTACATCTTCCGCGTGCTG	CTTCTCGCAATGGGCTGT
<i>Ntm</i>	CTCGCGTGGTCCTTCTGAG	TCTTTGGGTGGTTGTCTGTCT
<i>Peg10</i>	AAATTGCCTGACATGAAGAGGAGTCTA	AAGCCTAGTCACCACTTCAAACACACTAAA
<i>Peg3</i>	ACATTTCTGGTGTGTTGAGGAGTT	AGACCAGGTTCCGGTAATTCT
<i>Phlda2</i>	TCCATCCTCAAGGTGGACTG	ATCTCCTTGTGGTCCGGTGGT
<i>Plagl1</i>	CATATTTGCATGTTAGAAGAATCAGC	TGAGTCAGTTAGGTCAGTGTAGAGAGA
<i>Ppp1r9a</i>	TGTACGATGGCCCTTCATATTCC	AGCGGTTGTTCTGTCTGATT
<i>Pwcr1</i>	TGCTCTTTAGCAGGATGGTGT	GATGCAGGGATGCTCGTC
<i>Rian</i>	TCCAGTACCTGTTGCCACA	GGTAATGAGGTCCGGAAGC
<i>Sgce</i>	ATGGAGTTTCGCTCCTGTTG	GAGTCTGATGTGGCAAGTCC
<i>Slc22a18</i>	CCTCAGCTTCACCTGCATCC	GTGTACCTGGCGGGGCTTAC
<i>Slc22a2</i>	GGGTCACTCTTCCTCATGCC	GCAGTAAGCCCTCTCCTTGG
<i>Slc22a3</i>	GAGCGCTTGTTCTGGTCTCA	TGCAGCTATCACACAAGCCA
<i>Snrpn</i>	GAGGAGTTGGGGGACCAT	CAGCTGCTACAGTGCCTCTTC
<i>Snurf</i>	TCTGATTCCAAGCAAAAACCA	GTTCTCCTAGAAACAATGCAAGC
<i>Tfpi2</i>	CTGGGGCTGTTCGATTCTGC	TCTCCGCGTTATTTCTCTGTTG
<i>Ube3a</i>	CGAATGGCCACAGCTTGTA	GCTTCATTCCGGCTAGCTTCA
<i>Zim2</i>	TGCAAGGATTGTGGTAAGTCC	AGCTGCTGCTGCTTCATCTT
<i>Gapdh</i>	GCACCGTCAAGGCTGAGAAC	GGATCTCGCTCCTGGAAGATG
<i>U6</i>	CTCGCTTCGGCAGCACA	AACGCTTCACGAATTTGCGT
URP	TGGTGTCGTGGAGTCG	

Table S2. List of 44 homologous imprinted genes.

Gene	Location		Full Name	Gene Type	Expressed Allele
	Mouse	Human			
<i>Ano1</i>	7 AS	11q13.3	anoctamin 1, calcium activated chloride channel	PC	M
<i>Cdkn1c</i>	7 69.49 cM AS	11p15.5 AS	cyclin-dependent kinase inhibitor 1C (P57)	PC	M
<i>Ddc</i>	11 7.0 cM AS	7p12.2 AS	dopa decarboxylase	PC	P
<i>Dlk1</i>	12 54.0 cM	14q32	delta-like 1 homolog (Drosophila)	PC	P
<i>Gnas</i>	2 104.0 cM	20q13.3	GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus	PC	ID
<i>Gpr1</i>	1 AS	2q33.3 AS	G protein-coupled receptor 1	PC	P
<i>Grb10</i>	11 8.0 cM AS	7p12-p11.2 AS	growth factor receptor bound protein 10	PC	ID
<i>Gtl2</i>	12 54.0 cM	14q32	gene trap locus 2	NC	M
<i>H19</i>	7 69.03 cM AS	11p15.5 AS	H19, imprinted maternally expressed transcript	NC	M
<i>Hymai</i>	10	6q24.2 AS	hydatidiform mole associated and imprinted transcript	NC	P
<i>Igf2</i>	7 69.09 cM AS	11p15.5 AS	insulin-like growth factor 2	PC	P
<i>Igf2as</i>	7 69.09 cM	11p15.5	insulin-like growth factor 2, antisense	NC	P
<i>Igf2r</i>	17 7.35 cM AS	6q26	insulin-like growth factor 2 receptor	PC	M
<i>Inpp5f V2</i>	7 F3	10q26.11	inositol polyphosphate-5-phosphatase F	PC	P
<i>Kcnk9</i>	15 D3 AS	8q24.3 AS	potassium channel, subfamily K, member 9	PC	M
<i>Kcnq1</i>	7 69.3 cM	11p15.5	potassium voltage-gated channel, subfamily Q, member 1	PC	M
<i>Klf14</i>	6 A3.3 AS	7q32.3 AS	Kruppel-like factor 14	PC	M
<i>Magel2</i>	7 28.0 cM	15q11-q12 AS	melanoma antigen, family L, 2	PC	P
<i>Magi2</i>	5	7q21 AS	membrane associated guanylate kinase, WW and PDZ domain containing 2	PC	P
<i>Mest</i>	6 7.5 cM	7q32	mesoderm specific transcript	PC	P
<i>Mir296</i>	2 AS	20q13.32 AS	microRNA 296	NC	P
<i>Mir298</i>	2 AS	20q13.32 AS	microRNA 298	NC	P
<i>Mkrn3</i>	7 29.0 cM AS	15q11-q13	makorin, ring finger protein, 3	PC	P
<i>Nap1l5</i>	6 C1 AS	4q22.1 AS	nucleosome assembly protein 1-like 5	PC	P
<i>Ndn</i>	7 28.0 cM	15q11.2-q12 AS	neccdin	PC	P
<i>Nespas</i>	2 104.0 cM AS	20q13.32 AS	neuroendocrine secretory protein antisense	NC	P
<i>Nnat</i>	2 88.0 cM	20q11.2-q12	neuronatin	PC	P
<i>Ntm</i>	9 AS	11q25	neurotrimin	PC	M

<i>Peg10</i>	6 0.5 cM	7q21	paternally expressed 10	PC	P
<i>Peg3</i>	7 6.5 cM AS	19q13.4 AS	paternally expressed 3	PC	P
<i>Phlda2</i>	7 69.5 cM AS	11p15.5 AS	pleckstrin homology-like domain, family A, member 2	PC	M
<i>Plagl1</i>	10 15.0 cM	6q24-q25 AS	pleiomorphic adenoma gene-like 1	PC	P
<i>Ppp1r9a</i>	6 0.5 cM	7q21.3	protein phosphatase 1, regulatory (inhibitor) subunit 9A	PC	M
<i>Pwcr1</i>	7 29.0 cM AS	15q11.2	Prader-Willi syndrome chromosome region 1	NC	P
<i>Rian</i>	12 60.41 cM	14q32.31	RNA imprinted and accumulated in nucleus	NC	M
<i>Sgce</i>	6 1.0 cM AS	7q21-q22 AS	sarcoglycan, epsilon	PC	P
<i>Slc22a18</i>	7 69.5 cM	11p15.5	solute carrier family 22 (organic cation transporter), member 18	PC	M
<i>Slc22a2</i>	17 7.32 cM	6q26 AS	solute carrier family 22 (organic cation transporter), member 2	PC	M
<i>Slc22a3</i>	17 7.31 cM AS	6q26-q27	solute carrier family 22 (organic cation transporter), member 3	PC	M
<i>Snrpn</i>	7 29.0 cM AS	15q11.2	small nuclear ribonucleoprotein N	PC	P
<i>Snurf</i>	7 B5 AS	15q12	SNRPN upstream reading frame	PC	P
<i>Tfpi2</i>	6 1.0 cM AS	7q22 AS	tissue factor pathway inhibitor 2	PC	M
<i>Ube3a</i>	7 28.65 cM	15q11-q13 AS	ubiquitin protein ligase E3A	PC	M
<i>Zim2</i>	7 A1 AS	19q13.4 AS	zinc finger, imprinted 2	PC	M

Note: PC, protein coding; NC, non-coding; P, Paternal; M, Maternal; ID, isoform dependent.

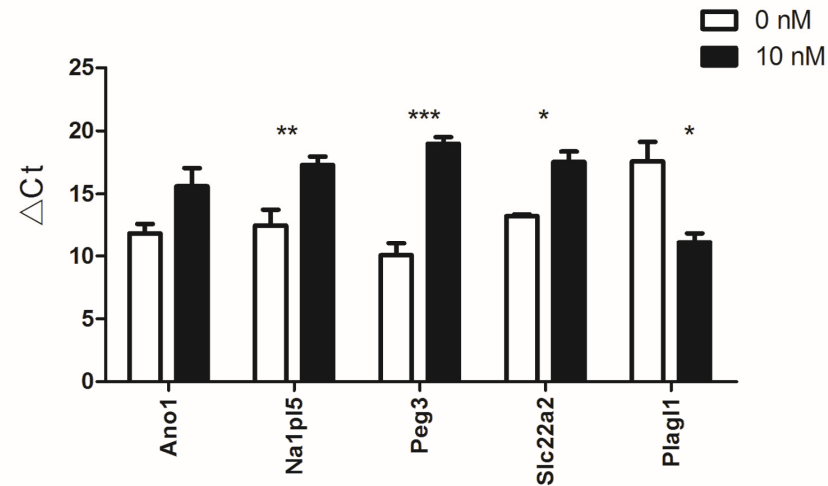


Figure S1. Expression profiles of *Ano1*, *Na1pl5*, *Peg3*, *Slc22a2* and *Plagl1*. Data are expressed as the mean \pm SME. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ versus control.



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