

Table S1 Microarray data from Fischer 344 rat pituitary tissue after a 3-week treatment with DES.

Pituitary Cell Markers

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
dopamine receptor 4	BI284462	36.148	589.64	16.31
somatostatin receptor 2	NM_019348	8.5494	154.38	18.06
galanin	NM_033237	38.625	10794	279.46
GnRH receptor	NM_031038	342.3	10.37	-33.01
GATA binding protein 2 (GATA 2)	NM_033442	81.014	18.031	-4.49
LH beta	NM_012858	1910.3	57.307	-33.33
FSH beta	M36804	181.73	94.362	-1.93
alpha GSU	NM_053918	7912.2	5133.7	-1.54
TSH beta	M10902	3881.3	523.92	-7.41
TRH receptor	M90308	43.186	21.502	-2.01
oxytocin	M25649	54.475	1.5437	-35.29
S100 protein beta	NM_013191	338.72	92.767	-3.65

Proliferation

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
cell growth regulator with EF hand domain 1 (CRG11)	U66470	6.2624	1293.9	206.62
Ki-67	AI714002	1.8453	185.32	100.43
growth associated protein 43 (GAP43)	NM_017195	37.094	1215.2	32.76
pleiomorphic adenoma gene-like 1	NM_012760	197.44	817.54	4.14
Inhibitor of DNA binding 2 (ID2)	AI008792	374.94	1252	3.34
Mif	NM_031051	597.45	2519.1	4.22
growth arrest specific 5	BF287008	906.36	2118.8	2.34
growth arrest specific 6	AA957335	122.96	988.45	8.04
neuronal growth regulator 1	NM_021682	380.18	58.176	-6.53

Genes relevant to pituitary tumour biology

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
pituitary tumor-transforming 1	NM_022391	9.6447	271.57	28.16
calbindin 3	NM_012521	25.683	5011.3	195.12
parvalbumin	AI175539	43.518	574.68	13.21
kallikrein 7	NM_012593	16.22	149.56	9.22
desmin	NM_022531	25.49	154.72	6.07
neurofilament, heavy polypeptide	AF031879	167.06	634.02	3.8
creatine kinase, brain	M14400	97.675	439.07	4.5
villin 2 (Ezrin)	AA851304	580.84	2262.1	3.89
metallothionein 3	NM_053968	524.17	1706.6	3.26
annexin A6	BI285568	360.59	830.91	2.3
ornithine decarboxylase 1	BF281299	580.42	1846	3.18
prohormone convertase 1	NM_017091	83.667	313.98	3.75

prohormone convertase 2	NM_012746	83.092	164.47	1.98
GDNF family receptor alpha 1	U59486	42.462	152.96	3.6
death associated protein kinase 1 (predicted)	AA818353	219.23	92.716	-2.36
neurofilament, light polypeptide	BF394545	176.51	40.013	-4.41
Angiotensin I converting enzyme 2	BE098785	3.857	38.254	9.92
renin 1	J02941	3.5966	21.902	6.09
angiotensin II receptor, type-1	NM_031009	1526.9	62.764	-24.33
Cell Cycle				
cyclin A2	AA998516	0.1434	102.97	718.3
cyclin B1	X64589	30.895	208.72	6.76
cyclin B2 (predicted)	AW253821	5.2336	258.08	49.31
cyclin D3	NM_012766	199.27	672.58	3.38
cyclin G1	NM_012923	990.29	3402.5	3.44
cyclin H	NM_052981	356.79	833.75	2.34
Cdk 2	BF542448	14.375	39.431	2.74
Aurora kinase A (Stk6)	AA996882	13.6	93.555	6.88
Aurora kinase B	NM_053749	18.904	115.79	6.13
p21 Cip1/Waf1	AI010427	83.32	245.05	2.94
p21 activated kinase 3	NM_019210	31.836	131.74	4.14
Cdk inhibitor 2A/p16INK4A	AF474976	57.581	30.281	-1.9
Cdk inhibitor 1C P57/Kip2	AI013919	178.46	69.61	-2.56

Growth factors

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
galanin	NM_033237	38.625	10794	279.46
transforming growth factor alpha	BG670310	0.5838	66.728	114.3
transforming growth factor, beta induced	BG379319	43.919	191.28	4.36
vasoactive intestinal polypeptide	AI412212	0.0677	5791.2	85509.8
nerve growth factor, gamma	NM_031523	292.68	4908.7	16.77
VGF nerve growth factor inducible	NM_030997	85.389	495.61	5.8
epidermal growth factor	NM_012842	60.136	99.947	1.66
epidermal growth factor receptor	M37394	109.36	189.11	1.73
insulin-like growth factor 2 receptor	NM_012756	73.789	221.78	3.01
insulin-like growth factor binding protein 3	AI713966	9.149	303.46	33.17
insulin-like growth factor binding protein 4	BE108969	19.267	159.57	8.28
insulin-like growth factor binding protein 6	BG673588	24.707	109.25	4.42
Vascular endothelial growth factor A	AI175732	188.41	321.5	1.71
bone morphogenetic protein 1 (BMP-1)	BI278614	51.094	165.46	3.24
glia maturation factor, gamma	BG666787	114.48	340.08	2.97
ciliary neurotrophic factor receptor	BE109686	31.787	224.66	7.07
olfactomedin-like 3	BI274355	671.94	4740.5	7.05

BMP and activin membrane-bound inhibitor (BAMBI)	AF387513	219.25	12.061	-18.18
uterine sensitization-associated gene 1 protein	AA892798	3293.7	693.95	-4.75
insulin-like growth factor binding protein 2	NM_013122	203.61	71.905	-2.83
Insulin-like growth factor binding protein 5	BF399783	267.69	124.49	-2.15

Intracellular signaling pathways

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
Rac GTPase-activating protein 1 (predicted)	AI409259	1.1782	204.02	173.17
protein kinase C, beta 1	M13706	7.2601	215.74	29.72
mitogen-activated protein kinase 12 (p38gamma)	NM_021746	29.913	221.68	7.41
AKT1 substrate 1 (proline-rich) (predicted)	AI102030	34.156	145.17	4.25
protein kinase C, zeta	AW533298	34.143	136.72	4
protein tyrosine kinase 2 beta	U69109	73.141	291.43	3.98
MAP kinase-interacting serine/threonine kinase 2 (predicted)	BM383395	158.51	540.59	3.41
serum/glucocorticoid regulated kinase	NM_019232	273.12	759.93	2.78
mitogen activated protein kinase kinase 2 (MEK2)	D14592	217.5	474.51	2.18
protein kinase C, alpha binding protein	NM_053460	97.892	201.61	2.06
Mitogen activated protein kinase 10	AW533194	214.16	106.75	-2.01
Protein kinase C, lambda	BF284699	242.54	119.05	-2.04
Protein phosphatase 1A, alpha isoform	AW521250	450.6	220.52	-2.04
phospholipase C, gamma 1	NM_013187	111.16	51.51	-2.16
Protein kinase inhibitor, alpha	AA893743	127.9	51.6	-2.48
Mitogen activated protein kinase 1	BF554794	100.83	39.612	-2.55
Mitogen-activated protein kinase 9	BG376172	116.59	41.55	-2.81
inositol polyphosphate-1-phosphatase (predicted)	BI275516	242.86	79.762	-3.04
protein kinase, cAMP dependent, catalytic, beta	D10770	400.63	110.27	-3.63
protein tyrosine phosphatase, receptor type, R	NM_053594	387.53	59.807	-6.48
guanylate cyclase 1, soluble, alpha 3	NM_017090	279.45	37.871	-7.38
regulator of G-protein signaling 4	NM_017214	172.23	17.987	-9.57
protein kinase C, theta	AI171093	109.28	10.758	-10.16

Development

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
Wnt 10a	AI029140	101.48	670.02	6.6
Wnt 4	NM_053402	5.3487	402.63	75.28
carboxypeptidase Z	NM_031766	10.664	352.7	33.07
delta-like 1 homolog (Dlk1)	NM_053744	362.95	2501.4	6.89

protein tyrosine phosphatase, receptor type, N	D45414	646.59	3181.9	4.92
Jagged 2	AI715578	36.475	150.59	4.13
Kruppel-like factor 4 (gut)	NM_053713	11.314	238.35	21.07
SoxLZ/Sox6 leucine zipper binding protein in testis (predicted)	BI276776	10.708	128.04	11.96
Disabled homolog 2 (Drosophila)	AI407821	26.888	222.75	8.28
transducin-like enhancer of split 3 (Tle3)	NM_053400	240.22	60.512	-3.97
decorin	BM390253	468.46	42.125	-11.12
lumican	NM_031050	106.67	2.3281	-45.82
SRY-box containing gene 4 (Sox4)	BI297183	776.57	218.53	-3.55
Similar to SOX2 protein	AA858564	221.49	55.464	-3.99
paired-like homeodomain transcription factor 2	NM_019334	2060.5	1269.7	-1.62

Receptors

Gene Name	GenBank #	Mean		Fold change
		Control	DES	
folate receptor 2 (fetal) (predicted)	BI274054	8.9147	82.349	9.24
low density lipoprotein receptor	X13722	165.95	444.01	2.68
thyroid hormone receptor beta	J03819	67.222	176.81	2.63
AXL receptor tyrosine kinase (predicted)	AI406520	112.36	292.97	2.61
very low density lipoprotein receptor	AA849857	83.125	204.56	2.46
progesterone receptor	NM_022847	131.78	246.99	1.87
Folate receptor 4 (delta) (predicted)	AI071973	133.19	76.095	-1.75
thyroid hormone receptor alpha	NM_031134	209.5	91.479	-2.29

Key genes upregulated or downregulated by the treatment have been categorized into pituitary cell markers, proliferation, genes relevant to pituitary tumour biology, growth factors, intracellular signalling pathways, development and receptors.