

Additional file 6: Table S5. Functional enrichment analysis of the most overexpressed genes of both cell types.

top 100 fold difference - somatic cells (compared to the other cell type)						
rank in fold difference	locusName	define	baseMean somatic cells	baseMean reproductive cells	fold difference	functional group
1	Vocar.0002s0260	unknown function	36.8	0.3	142.7	[unknown]
2	Vocar.0904s0001	unknown function	20936.2	157.8	132.7	[unknown]
3	Vocar.0904s0002	unknown function	476.5	4.0	118.8	[unknown]
4	Vocar.0034s0103	unknown function	59.5	1.2	51.7	[unknown]
5	Vocar.0026s0055	unknown function	116.6	2.7	42.4	[unknown]
6	Vocar.0075s0010	unknown function	111.8	2.7	42.0	[unknown]
7	Vocar.0003s0420	aprataxin-like protein, RNA ligase, DNA ligase III	19989.4	489.7	40.8	other functions
8	Vocar.0021s0002	unknown function	17563.5	480.8	36.5	[unknown]
9	Vocar.0321s0002	unknown function	40.7	1.1	35.5	[unknown]
10	Vocar.0374s0001	blackjack, microtubule associated protein	699.8	20.7	33.8	flagella associated
11	Vocar.0041s0047	tetratricopeptide repeat protein; kinesin light chain	3211.6	96.0	33.5	cytoskeleton
12	Vocar.0006s0060	unknown function	1769.5	53.1	33.3	[unknown]
13	Vocar.0004s0368	pherophorin	443.9	13.4	33.1	ECM compound
14	Vocar.0006s0207	glycosyltransferase 14 family protein	2917.5	88.6	32.9	other functions
15	Vocar.0007s0063	unknown function	25.0	0.8	32.3	[unknown]
16	Vocar.0059s0041	small cysteine-rich extracellular protein	122224.3	3964.0	30.8	ECM compound
17	Vocar.0004s0369	pherophorin (duf3707)	19521.2	633.9	30.8	ECM compound
18	Vocar.0050s0060	Bacteriorhodopsin-like protein	5707.7	186.3	30.6	other functions
19	Vocar.0014s0094	unknown function	59.6	2.0	30.1	[unknown]
20	Vocar.0007s0026	unknown function	2253.0	74.9	30.1	[unknown]
21	Vocar.0062s0031	gametolysin / lysin	3501.6	118.5	29.5	ECM compound
22	Vocar.0016s0268	shippo-1-related, PGP motif	3079.1	105.9	29.1	flagella associated
23	Vocar.0019s0251	ammonium transporter	477.9	16.5	29.0	other functions
24	Vocar.0075s0009	disintegrin / metalloproteinase	87.4	3.0	29.0	ECM compound
25	Vocar.0029s0048	unknown function	33.0	1.1	28.8	[unknown]
26	Vocar.0034s0056	guanylate cyclase	4418.8	155.0	28.5	other functions
27	Vocar.0017s0072	unknown function	28077.7	985.8	28.5	[unknown]
28	Vocar.0062s0034	pr-1 like protein	2205.0	77.4	28.5	pathogen defense
29	Vocar.0005s0200	tetratricopeptide repeat protein; kinesin light chain	3461.3	122.0	28.4	cytoskeleton
30	Vocar.0013s0137	unknown function	423.8	15.4	27.5	[unknown]
31	Vocar.0051s0012	unknown function	3632.0	133.4	27.2	[unknown]
32	Vocar.0003s0333	unknown function	1513.8	55.6	27.2	[unknown]
33	Vocar.0034s0075	pherophorin	124.9	4.6	27.2	ECM compound
34	Vocar.0013s0248	centrin2, EF-hand domain pair, calcium binding domain	5607.0	206.5	27.1	other functions
35	Vocar.0007s0123	unknown function	352.3	13.0	27.1	[unknown]
36	Vocar.0019s0250	unknown function	550.6	20.4	27.0	[unknown]
37	Vocar.0002s0257	stop protein, neuronal microtubule stability	4026.7	151.0	26.7	flagella associated
38	Vocar.0025s0001	unknown function	2097.4	79.1	26.5	[unknown]

39	Vocar.0008s0372	unknown function	712.7	27.0	26.4	[unknown]
40	Vocar.0025s0040	dopamine beta hydroxylase related	2240.1	85.6	26.2	other functions
41	Vocar.0015s0002	pr-1 like protein	740.9	28.4	26.0	pathogen defense
42	Vocar.0062s0033	sterol esterase / gametolysin peptidase m11	1007.5	39.1	25.8	ECM compound
43	Vocar.0005s0209	flagella associated protein	14501.7	562.8	25.8	flagella associated
44	Vocar.0005s0103	unknown function	3002.0	116.5	25.8	[unknown]
45	Vocar.0020s0152	transducin family protein / WD-40 repeat family protein	6655.9	260.9	25.5	cell division
46	Vocar.0016s0015	unknown function	227.5	8.9	25.5	[unknown]
47	Vocar.0008s0351	myosin light chain kinase	51.2	2.0	25.4	cytoskeleton
48	Vocar.0019s0149	unknown function	4028.5	158.9	25.4	[unknown]
49	Vocar.0012s0267	unknown function	1298.3	51.2	25.3	[unknown]
50	Vocar.0016s0113	unknown function	4110.5	162.8	25.3	[unknown]
51	Vocar.0059s0039	Cysteine proteinases superfamily protein, cathepsin B1	259801.3	10462.6	24.8	other functions
52	Vocar.0001s1576	calpain-type cysteine protease family, Calpain-2	1582.3	63.7	24.8	other functions
53	Vocar.0002s0553	dynein heavy chain 6, axonemal	105.6	4.3	24.7	cytoskeleton
54	Vocar.0011s0149	unknown function	74.9	3.0	24.6	[unknown]
55	Vocar.0020s0135	scavenger receptor cys-rich	1258.7	51.2	24.6	pathogen defense
56	Vocar.0006s0353	unknown function	28.9	1.2	24.5	[unknown]
57	Vocar.0006s0059	unknown function	241.8	9.9	24.4	[unknown]
58	Vocar.0007s0156	kinesin 1, kinesin FAP125	7364.3	303.4	24.3	cytoskeleton
59	Vocar.0020s0212	metallo-peptidase family M12B reprolysin-like	7531.8	312.2	24.1	ECM compound
60	Vocar.0005s0015	serineaspartate repeat-containing protein, ca binding	837.2	35.5	23.6	ECM compound
61	Vocar.0046s0015	pherophorin	67633.4	2871.5	23.6	ECM compound
62	Vocar.0014s0099	unknown function	4216.1	179.4	23.5	[unknown]
63	Vocar.0031s0008	hemingway homologue, sperm flagella assembly	15274.8	652.6	23.4	flagella associated
64	Vocar.0006s0468	unknown function	1380.3	59.0	23.4	[unknown]
65	Vocar.0065s0001	unknown function	227.8	9.8	23.3	[unknown]
66	Vocar.0016s0016	unknown function	5259.8	227.6	23.1	[unknown]
67	Vocar.0012s0283	unknown function	17836.1	773.9	23.0	[unknown]
68	Vocar.0004s0251	ras group-related LRR 1, Ras suppressor protein	1109.4	48.2	23.0	other functions
69	Vocar.0004s0511	2-oxoglutarate (2OG) and Fe(II)-dependent oxygenase	5923.5	257.2	23.0	other functions
70	Vocar.0004s0423	MYND finger (zf-MYND) containing protein	11793.4	518.1	22.8	other functions
71	Vocar.0012s0268	unknown function	918.1	40.4	22.7	[unknown]
72	Vocar.0013s0115	protein cal-5 (calcium binding)	4062.0	179.3	22.6	other functions
73	Vocar.0004s0255	extracellular matrix glycoprotein pherophorin I	158963.2	7038.4	22.6	ECM compound
74	Vocar.0057s0045	unknown function	8555.9	379.8	22.5	[unknown]
75	Vocar.0034s0013	cell division control 2, cyclin-dependent kinase-like 5	20711.1	924.6	22.4	cell division
76	Vocar.0005s0167	Protein kinase superfamily protein,calmodulin-binding	9486.7	425.5	22.3	other functions
77	Vocar.0016s0307	ADP-ribosylation factor B1A	808.4	36.3	22.3	other functions
78	Vocar.0019s0248	periodic tryptophan protein 2	6178.1	277.8	22.2	other functions
79	Vocar.0039s0015	unknown function	3099.3	139.4	22.2	[unknown]
80	Vocar.0028s0145	MOS4-associated complex 3B; WD40 repeat protein	5289.5	239.3	22.1	other functions
81	Vocar.0026s0030	unknown function	2254.5	102.1	22.1	[unknown]
82	Vocar.0002s0489	sperm-tail PG-rich repeat (shippo-rpt)	30251.2	1381.2	21.9	flagella associated
83	Vocar.0015s0078	unknown function	3294.5	150.4	21.9	[unknown]
84	Vocar.0001s1194	flagella associated protein	17255.7	788.9	21.9	flagella associated
85	Vocar.0024s0216	pherophorin (DUF3707)	932.9	42.7	21.9	ECM compound
86	Vocar.0028s0147	flagella associated protein	3766.3	172.6	21.8	flagella associated

87	Vocar.0015s0126	flagella associated protein	6113.7	280.9	21.8	flagella associated
88	Vocar.0014s0054	unknown function	5779.0	265.8	21.7	[unknown]
89	Vocar.0015s0258	adenosine monophosphate kinase, KPL2-related	29278.0	1351.0	21.7	flagella associated
90	Vocar.0001s0591	flagella associated protein	4936.9	229.4	21.5	flagella associated
91	Vocar.0012s0001	unknown function	2360.0	109.8	21.5	[unknown]
92	Vocar.0015s0006	unknown function	196.9	9.2	21.5	[unknown]
93	Vocar.0006s0264	flagella associated protein	2024.0	94.4	21.4	flagella associated
94	Vocar.0005s0122	nuclear control of ATPase protein 2, flagella associatec	20987.6	981.4	21.4	flagella associated
95	Vocar.0028s0005	flagella associated protein	14716.2	690.5	21.3	flagella associated
96	Vocar.0016s0002	spermatogenesis-associated protein 4	3638.5	171.1	21.3	flagella associated
97	Vocar.0070s0007	NGS-gene like, nitrogen starvation gene	321905.6	15149.4	21.2	other functions
98	Vocar.0007s0124	NAD(P)-linked oxidoreductase superfamily protein	8065.2	380.3	21.2	other functions
99	Vocar.0030s0118	unknown function	5789.4	273.0	21.2	[unknown]
100	Vocar.0004s0402	transient receptor potential channel	5703.6	269.2	21.2	other functions

top 100 fold difference - reproductive cells (compared to the other cell type)

rank in fold difference	locusName	define	baseMean somatic cells	baseMean reproductive cells	fold difference	functional group
1	Vocar.0002s0575	myb domain protein 3r-5, myb-like DNA-binding protein	0.5	454.9	900.6	cell division
2	Vocar.0004s0462	unknown function	1.5	384.5	248.6	[unknown]
3	Vocar.0021s0094	peptidoglycan binding domain, topoisomerase	0.5	124.5	246.6	pathogen defense
4	Vocar.0013s0228	unknown function	0.5	115.5	228.7	[unknown]
5	Vocar.0033s0161	plus-end-directed kinesin ATPase / kinesin	6.2	988.1	158.9	cytoskeleton
6	Vocar.0002s0013	unknown function	4.3	627.8	145.7	[unknown]
7	Vocar.0002s0038	unknown function	3.6	518.6	142.4	[unknown]
8	Vocar.0002s0605	unknown function	3.4	465.5	135.0	[unknown]
9	Vocar.0007s0165	cytochrome B561 / ferric reductase, transmembrane	2.1	267.5	127.6	other functions
10	Vocar.0039s0020	cell adhesion molecule, algal-CAM	19.9	2509.1	126.0	ECM compound
11	Vocar.0002s0216	unknown function	1.4	172.1	123.2	[unknown]
12	Vocar.0020s0148	unknown function	0.3	34.5	118.8	[unknown]
13	Vocar.0053s0065	diphthamide synthesis DPH2 family protein	1.7	196.4	116.4	other functions
14	Vocar.0025s0185	transcription activator, Nckap1 related	2.0	232.3	114.5	gene regulation
15	Vocar.0055s0039	JmjC domain-containing histone demethylation protein	3.6	401.1	110.1	gene regulation
16	Vocar.0019s0016	dynammin-like protein ARC5	2.4	258.8	109.5	cell division
17	Vocar.0011s0353	chloroplast division site determinant protein	0.7	72.3	106.9	cell division
18	Vocar.0042s0032	unknown function	0.4	41.1	106.4	[unknown]
19	Vocar.0001s1647	JmjC domain-containing histone demethylation protein	5.4	544.4	101.3	gene regulation
20	Vocar.0032s0001	unknown function	0.9	86.6	97.2	[unknown]
21	Vocar.0004s0179	chromatin binding proten SWI/SNF-related	13.8	1288.3	93.3	gene regulation
22	Vocar.0019s0201	unknown function	2.2	202.5	93.3	[unknown]
23	Vocar.0006s0181	N1-methyltransferase	1.6	146.6	92.2	other functions
24	Vocar.0029s0079	gag polypeptide of LTR retrotransposon, copia type	16.4	1501.7	91.4	other functions
25	Vocar.0018s0129	BACK protein with BTB, C-terminal Kelch domain	2.0	173.5	85.8	other functions
26	Vocar.0003s0030	DNA primases; small subunit	4.8	409.5	85.6	cell division
27	Vocar.0021s0184	helicase, minichromosome maintenance protein 3	12.6	1027.7	81.7	cell division

28	Vocar.0002s0282	unknown function	1.9	153.0	80.5	[unknown]
29	Vocar.0015s0250	UvrB/UvrC domain-containing protein	3.6	283.8	79.6	other functions
30	Vocar.0018s0186	unknown function	2.6	204.3	79.3	[unknown]
31	Vocar.0001s0263	unknown function	1.7	134.3	77.1	[unknown]
32	Vocar.0012s0232	unknown function	9.2	704.8	76.8	[unknown]
33	Vocar.0021s0129	unknown function	15.4	1168.1	76.1	[unknown]
34	Vocar.0003s0025	pherophorin	182.0	13842.4	76.0	ECM compound
35	Vocar.0036s0102	unknown function	26.2	1973.2	75.4	[unknown]
36	Vocar.0006s0454	septum site-determining protein, MIND homolog	13.8	1037.4	75.3	cell division
37	Vocar.0001s0298	pherophorin	139.5	10295.9	73.8	ECM compound
38	Vocar.0020s0211	unknown function	0.8	55.1	71.4	[unknown]
39	Vocar.0011s0177	G2/mitotic-specific cyclin A	4.0	279.2	70.7	cell division
40	Vocar.0011s0182	unknown function	11.1	788.0	70.7	[unknown]
41	Vocar.0014s0064	myosin light-chain kinase	3.6	243.8	68.3	cytoskeleton
42	Vocar.0024s0192	RING/U-box protein with Zinc finger, C3HC4 type	7.0	469.3	66.9	gene regulation
43	Vocar.0002s0462	sterol 4-alpha-methyl-oxidase 2-2	1.2	77.1	66.6	other functions
44	Vocar.0073s0026	RING/FYVE/PHD zinc finger superfamily protein	10.8	706.8	65.6	gene regulation
45	Vocar.0003s0022	unknown function	6.0	394.5	65.6	[unknown]
46	Vocar.0184s0001	unknown function	0.9	58.2	65.3	[unknown]
47	Vocar.0439s0001	unknown function	1.7	107.5	64.6	[unknown]
48	Vocar.0031s0098	ribonucleoside-diphosphate reductase small chain	27.5	1762.2	64.0	cell division
49	Vocar.0027s0113	unknown function	51.3	3253.0	63.4	[unknown]
50	Vocar.0001s0297	pherophorin (DUF3707)	5.6	340.3	60.6	ECM compound
51	Vocar.0030s0092	flagellar associated protein	4.1	250.2	60.4	flagella associated
52	Vocar.0003s0026	pherophorin	454.2	27323.7	60.2	ECM compound
53	Vocar.0036s0088	kinetochore protein NDC80, spindle checkp. Signalling	11.7	667.0	57.2	cell division
54	Vocar.0003s0021	pherophorin (DUF3707)	1.4	78.8	56.4	ECM compound
55	Vocar.0008s0168	unknown function	0.9	49.2	55.2	[unknown]
56	Vocar.0003s0023	pherophorin	255.3	13981.7	54.8	ECM compound
57	Vocar.0029s0112	unknown function	30.5	1671.8	54.8	[unknown]
58	Vocar.0036s0103	unknown function	20.7	1130.6	54.6	[unknown]
59	Vocar.0075s0002	unknown function	151.1	8138.0	53.9	[unknown]
60	Vocar.0003s0321	unknown function	1.0	54.3	53.7	[unknown]
61	Vocar.0013s0164	unknown function	1.2	61.8	53.3	[unknown]
62	Vocar.0006s0320	proliferating cell nuclear antigen 2	56.8	3013.2	53.1	cell division
63	Vocar.0001s1329	serine/threonine-protein kinase TNNI3K	0.5	26.5	52.5	other functions
64	Vocar.0013s0200	PAN-like domain (PAN_3), carbohydrate-binding	6.2	324.7	52.2	other functions
65	Vocar.0017s0205	unknown function	4.9	256.6	52.1	[unknown]
66	Vocar.0005s0369	haloacid dehalogenase-like hydrolase (HAD) protein	2.6	135.9	51.7	other functions
67	Vocar.0027s0096	ankyrin repeat protein (cytoskeleton associated)	49.4	2545.7	51.6	cytoskeleton
68	Vocar.0001s0226	unknown function	26.6	1364.6	51.3	[unknown]
69	Vocar.0029s0111	Cyclin A1, G2/mitotic-specific cyclin B	15.4	778.9	50.4	cell division
70	Vocar.0003s0405	kinesin-like protein 1	26.8	1346.1	50.3	cytoskeleton
71	Vocar.0031s0085	ribonucleotide reductase 1, ribonucleoside-diphosphate	52.6	2643.8	50.3	cell division
72	Vocar.0061s0028	Metal-dependent phosphohydrolase, cyclin-L1-1	14.3	717.1	50.3	cell division
73	Vocar.0039s0070	RecQ-mediated genome instability protein 2 (RMI2)	6.7	335.6	50.1	cell division
74	Vocar.0001s0749	DNA-binding enhancer protein-related	7.7	383.5	49.8	gene regulation
75	Vocar.0004s0285	unknown function	58.5	2905.9	49.7	[unknown]

76	Vocar.0001s0882	tRNA/rRNA methyltransferase (SpoU) family protein	1.9	93.2	49.0	gene regulation
77	Vocar.0005s0001	unknown function	46.9	2279.6	48.6	[unknown]
78	Vocar.0024s0154	unknown function	12.3	598.1	48.6	[unknown]
79	Vocar.0019s0200	phragmoplast orienting kinesin 2, putative kinesin K39	3.2	152.1	47.8	cell division
80	Vocar.0045s0055	sumo conjugation enzyme 1	9.2	428.7	46.5	other functions
81	Vocar.0034s0027	unknown function	1.5	70.2	46.3	[unknown]
82	Vocar.0001s0192	Transcription factor DP, E2F interaction	42.4	1960.9	46.2	cell division
83	Vocar.0026s0184	chloroplast outer envelope protein	8.4	385.7	45.7	other functions
84	Vocar.0009s0116	unknown function	2.0	93.3	45.5	[unknown]
85	Vocar.0033s0046	plastid division protein FtsZ1	51.3	2331.7	45.4	cell division
86	Vocar.0003s0466	unknown function	2.3	104.7	45.3	[unknown]
87	Vocar.0025s0165	DNA-directed DNA polymerase alpha	22.0	991.5	45.0	cell division
88	Vocar.0001s0295	pherophorin (DUF3707)	34.7	1559.2	45.0	ECM compound
89	Vocar.0004s0233	unknown function	3.8	170.6	44.7	[unknown]
90	Vocar.0025s0064	unknown function	6.9	306.9	44.6	[unknown]
91	Vocar.0018s0226	unknown function	0.6	25.8	44.4	[unknown]
92	Vocar.0032s0002	unknown function	1.9	81.6	43.9	[unknown]
93	Vocar.0001s0296	pherophorin (DUF3707)	17.1	750.4	43.9	ECM compound
94	Vocar.0001s0450	class I glutamine amidotransferase-like protein	3.3	142.0	43.1	other functions
95	Vocar.0009s0333	unknown function	1.9	81.8	43.0	[unknown]
96	Vocar.0001s0294	pherophorin	13.8	593.8	42.9	ECM compound
97	Vocar.0001s1158	DegP protease 10, HtrA2 peptidase / serine proteinase	1.5	64.5	42.6	other functions
98	Vocar.0011s0135	pyruvate dehydrogenase kinase	16.9	716.5	42.3	other functions
99	Vocar.0003s0489	unknown function	19.4	822.1	42.3	[unknown]
100	Vocar.0005s0002	unknown function	37.6	1584.4	42.2	[unknown]