

Table S1. Putative target genes regulated by FOXJ1 with confirmed expression in the SCN

<i>Gene</i>	Affymetrix Probe set ID	RefSeq Transcript ID (NCBI)	Chr	Biological Process(es)	Molecular Function(s)	Cell compartment(s)
Secreted factors						
<i>Ttr</i>	10454192	NM_013697	chr18	thyroid hormone generation // transport	hormone activity // steroid binding // retinal binding // retinol binding	extracellular region
Extracellular matrix						
<i>Prelp</i>	10357870	NM_054077	chr1	cell aging	protein binding	extracellular region // proteinaceous extracellular matrix
Membrane Associated Proteins						
<i>Cldn2</i>	10602033	NM_016675	chrX	calcium-independent cell-cell adhesion	structural molecule activity	tight junction // membrane // cell junction
<i>Tm4sf1</i>	10498273	NM_008536	chr3	---	---	membrane
Membrane Channels						
<i>Clic6</i>	10436958	NM_172469	chr16	transport // ion transport // chloride transport	voltage-gated ion channel activity	cytoplasm // membrane
<i>Kcnj16</i>	10382316	NM_010604	chr11	potassium ion transport	inward rectifier potassium channel activity	membrane
Sperm/flagellum/cilium Proteins						
<i>Efhc1</i>	10345046	EU520262	chr1	cellular calcium ion homeostasis // positive regulation of apoptosis	calcium ion binding	cilium // axoneme // flagellum // cell soma
<i>Spag6</i>	10438049	NM_015773	chr16	spermatogenesis // cell projection organization and biogenesis // sperm motility	binding	cytoplasm // cytoskeleton // microtubule // cilium // flagellum // cell projection
<i>Spa17</i>	10592336	NM_011449	chr9	signal transduction // binding of sperm to zona pellucida	cAMP-dependent protein kinase regulator activity	membrane
<i>Spata17</i>	10360942	NM_028848	chr1	spermatogenesis	calmodulin binding	cytoplasm
<i>Spata18</i>	10522445	BC050799	chr5	spermatogenesis	---	cytoplasm
<i>Tsnaxip1</i>	10574880	NM_024445	chr8	multicellular organismal development // spermatogenesis // cell differentiation	protein binding	cytoplasm
Calcium Binding Proteins						
<i>Capsl</i>	10423024	NM_029341	chr15	---	calcium ion binding	cytoplasm
<i>Calml4</i>	10586118	NM_138304	chr9	---	calcium ion binding	---
<i>Efcab1</i>	10433782	NM_025769	chr16	---	calcium ion binding	---
<i>Efhb</i>	10451786	NM_172497	chr17	---	calcium ion binding	---
<i>Prrg4</i>	10485624	NM_178695	chr2	---	calcium ion binding	extracellular region

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Kinase/Phosphatase Proteins						
<i>Cdk14</i>	10453166	NM_001033443	chr17	protein amino acid phosphorylation	nucleotide binding // protein kinase activity // protein serine/threonine kinase activity // cyclin-dependent protein kinase activity // ATP binding // kinase activity // transferase activity	cytoplasm
<i>Musk</i>	10505145	NM_001037127	chr4	regulation of transcription, DNA-dependent // protein amino acid phosphorylation // neuromuscular junction development // regulation of synaptic growth at neuromuscular junction // receptor clustering // receptor clustering	protein serine/threonine kinase activity // protein tyrosine kinase activity // receptor activity // ATP binding // transferase activity	plasma membrane // integral to plasma membrane // integral to membrane // neuromuscular junction
<i>Nek5</i>	10577471	NM_177898	chr8	protein amino acid phosphorylation	nucleotide binding // magnesium ion binding // protein kinase activity // protein serine/threonine kinase activity // ATP binding // kinase activity // transferase activity // metal ion binding	---
<i>Iqca</i>	10356512	ENSMUST00000113094	chr1	---	nucleotide binding // ATP binding // nucleoside-triphosphatase activity	---
<i>Ysk4</i>	10357381	XM_914055	chr1	Homologue of Sps1/Ste20-related kinase 4 (Yeast)	---	---
Metabolic Proteins						
<i>Apoe</i>	10560624	NM_009696	chr7	lipid metabolic process // cholesterol catabolic process // transport // cellular calcium ion homeostasis // response to oxidative stress // regulation of gene expression // axon regeneration // vasodilation // artery morphogenesis	lipid transporter activity // lipoprotein binding // heparin binding // lipid binding // cholesterol transporter activity	extracellular region // extracellular space // chylomicron
<i>Bbox1</i>	10485700	NM_130452	chr2	carnitine biosynthetic process // oxidation reduction	iron ion binding // gamma-butyrobetaine dioxygenase activity // electron carrier activity // oxidoreductase activity	cytoplasm
<i>Car9</i>	10504337	NM_139305	chr4	morphogenesis of an epithelium // one-carbon compound metabolic process // secretion	carbonate dehydratase activity // zinc ion binding // lyase activity	membrane // cell projection
<i>Cpn1</i>	10467887	NM_030703	chr19	proteolysis	carboxypeptidase activity // metallopeptidase activity // zinc ion binding	extracellular region

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<i>Dnajb13</i>	10565890	NM_153527	chr7	protein folding	heat shock protein binding // unfolded protein binding	---
<i>Enpp2</i>	10428619	NM_015744	chr15	chemotaxis // lipid catabolic process	nucleic acid binding // endonuclease activity // phosphodiesterase I activity // nucleotide diphosphatase activity // hydrolase activity // metal ion binding // alkylglycerophosphoethanolamine phosphodiesterase activity	extracellular region // membrane
<i>Folr1</i>	10566034	NM_008034	chr7	posttranslational protein targeting to membrane // folic acid metabolic process	receptor activity // folic acid binding // folic acid transporter activity	membrane
<i>Hspa8</i>	10584572	NM_031165	chr9	protein folding // response to stress // chaperone cofactor-dependent protein folding // regulation of cell cycle	nucleotide binding // protein binding // ATP binding // ATPase activity // unfolded protein binding	cytoplasm
<i>Mdh1b</i>	10355121	NM_029696	chr1	carbohydrate metabolic process // tricarboxylic acid cycle // malate metabolic process // oxidation reduction	catalytic activity // oxidoreductase activity // malate dehydrogenase activity	---
<i>Wdr66</i>	10525516	BC138176	chr5	---	peptidase activity	---
Cytoskeletal/microtubule Associated Proteins						
<i>Dynl1</i>	10532984	NM_019682	chr5	microtubule-based process // microtubule-based movement // negative regulation of nitric oxide biosynthetic process	motor activity // microtubule motor activity // enzyme inhibitor activity	cytoplasm // cytoskeleton
<i>Dynlrb2</i>	10575725	NM_029297	chr8	---	motor activity	cytoplasm // cytoskeleton
<i>Dnahc11</i>	10403112	NM_010060	chr12	ciliary or flagellar motility // determination of left/right symmetry	nucleotide binding // microtubule motor activity // ATP binding	cilium
<i>Dnahc12</i>	10413333	ENSMUST00000073309	chr14	---	---	---
<i>Dnahc3</i>	10567446	BC051401	chr7	microtubule-based movement // biological_process	nucleotide binding // molecular_function // motor activity // microtubule motor activity // ATP binding // ATPase activity // nucleoside-triphosphatase activity	cytoskeleton // cilium
<i>Dnahc5</i>	10423388	NM_133365	chr15	ciliary or flagellar motility // microtubule-based movement	nucleotide binding // motor activity // microtubule motor activity // ATP binding // ATPase activity // nucleoside-triphosphatase activity	cytoskeleton // cilium
<i>Dnahc6</i>	10545502	ENSMUST00000114040	chr6	---	---	---
<i>Dnahc9</i>	10387029	NM_001099633	chr11	---	nucleotide binding // ATP binding	cilium

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<i>Dnaic1</i>	10504072	NM_175138	chr4	---	motor activity	cytoskeleton // cilium
<i>Dnali1</i>	10516259	NM_175223	chr4	---	motor activity	dynein complex
<i>Kif27</i>	10409666	NM_175214	chr13	microtubule-based movement	nucleotide binding // motor activity // microtubule motor activity // ATP binding	microtubule // microtubule associated complex
<i>Kif6</i>	10445839	NM_177052	chr17	---	nucleotide binding // motor activity // ATP binding	microtubule
<i>Kif9</i>	10589541	NM_010628	chr9	microtubule-based movement	nucleotide binding // motor activity // microtubule motor activity // ATP binding	microtubule // microtubule associated complex
<i>Rshl3</i>	10362472	BC138000	chr10	---	---	cilium (unconfirmed)
<i>Tekt4</i>	10442807	NM_027951	chr17	microtubule cytoskeleton organization and biogenesis // cell projection organization and biogenesis	structural molecule activity	microtubule // cilium // flagellum // cell projection
<i>Tmod1</i>	10504692	NM_021883	chr4	myofibril assembly // muscle thick filament assembly	actin binding // tropomyosin binding	cytoplasm // cytoskeleton // myofibril
<i>Ttll6</i>	10380599	NM_172799	chr11	protein modification process	tubulin-tyrosine ligase activity	cilium // cell projection
Nuclear Proteins						
<i>Meig1</i>	10479761	NM_008579	chr2	meiosis	protein binding	nucleus
<i>Mns1</i>	10586907	NM_008613	chr9	meiosis	---	nucleus // nuclear envelope // intermediate filament
<i>Mif1</i>	10492469	NM_001039543	chr3	myeloid progenitor cell differentiation // transcription // cell cycle // cell differentiation	DNA binding // protein binding	nucleus // cytoplasm
<i>Nek11</i>	10596327	NM_172461	chr9	protein amino acid phosphorylation // cell cycle	nucleotide binding // protein kinase activity // protein serine/threonine kinase activity // transferase activity // metal ion binding	nucleus
<i>Syne1</i>	10361381	NM_001079686	chr10	biological_process	actin binding // protein binding	nuclear envelope // sarcomere

Table S1. List of 55 characterized genes consistently and significantly down regulated in the *FoxJ1 null* SCN during early postnatal development (P1-P14). Expression of these genes in the ependymal layer of the SVZ and in the RMS was confirmed in the Allen Brain Atlas (<http://mouse.brain-map.org/>); Chr, chromosome; ---, information not available or unknown.