

Supplementary information, Table S4 All the significantly enriched KEGG pathways for each endogenous Yamanaka factor

	Developmental Signaling Pathway	P-value	Q-value
Oct4	Wnt signaling pathway	6.63E-07	3.71E-05
	Cell cycle	6.78E-05	0.002529031
	p53 signaling pathway	0.01026056	0.07957645
	Focal adhesion	0.012291752	0.080969922
	Jak-STAT signaling pathway	0.01850338	0.094186194
	TGF-beta signaling pathway	0.041724106	0.157699385
	Hedgehog signaling pathway	0.047792277	0.157699385
	MAPK signaling pathway	0.048920028	0.157699385
	Adherens junction	0.0493014	0.157699385
	Apoptosis	0.092480469	0.240846548
Sox2	Cell cycle	0.001140172	0.005532097
	Wnt signaling pathway	0.001794989	0.006144587
	TGF-beta signaling pathway	0.023735757	0.03693272
	Gap junction	0.030466111	0.042416303
	Axon guidance	0.033455359	0.042416303
	p53 signaling pathway	0.033221754	0.042416303
	Cytokine-cytokine receptor interaction	0.05525871	0.055635592
	Focal adhesion	0.069612964	0.066193983
	ErbB signaling pathway	0.074535899	0.067802513
Klf4	p53 signaling pathway	0.001370763	0.010749643
	Axon guidance	0.010209848	0.050951427
	Dorso-ventral axis formation	0.064067738	0.146540579
	Hedgehog signaling pathway	0.077519222	0.151140523
	Jak-STAT signaling pathway	0.087934668	0.151311
	Gap junction	0.094371698	0.151633926
c-Myc	Cell cycle	2.18E-10	1.18E-08
	p53 signaling pathway	7.30E-06	0.000198347
	Apoptosis	0.004558509	0.029127712
	Jak-STAT signaling pathway	0.012849185	0.04812936
	Notch signaling pathway	0.018753297	0.061729989
	Wnt signaling pathway	0.028736225	0.084364648
	Focal adhesion	0.045510772	0.12620662
	Dorso-ventral axis formation	0.074126324	0.171575553
	TGF-beta signaling pathway	0.088062649	0.183958943
	Cancers	P-value	Q-value
Oct4	Colorectal cancer	0.000104318	0.002920505
	Prostate cancer	0.000142878	0.003200033
	Acute myeloid leukemia	0.000211739	0.003387363
	Basal cell carcinoma	0.000211739	0.003387363

	Thyroid cancer	0.000671954	0.009406074
	Endometrial cancer	0.012256597	0.080969922
	Pancreatic cancer	0.014920509	0.088173128
	Bladder cancer	0.017042656	0.091457859
	Melanoma	0.017150685	0.091457859
	Glioma	0.034642235	0.153535345
	Small cell lung cancer	0.0396158	0.157699385
	Chronic myeloid leukemia	0.05492066	0.157699385
Sox2	Endometrial cancer	5.74E-05	0.000982105
	Basal cell carcinoma	0.00059471	0.005089515
	Colorectal cancer	0.001292852	0.005532097
	Prostate cancer	0.001569166	0.005968392
	Thyroid cancer	0.002032884	0.006326314
	Small cell lung cancer	0.00564803	0.012211172
	Acute myeloid leukemia	0.019392964	0.031612277
	Glioma	0.034853174	0.042610358
	Pancreatic cancer	0.041838167	0.047739985
	Melanoma	0.045606741	0.050361451
	Chronic myeloid leukemia	0.049559135	0.053015716
	Non-small cell lung cancer	0.0786517	0.069035805
Klf4	Acute myeloid leukemia	0.019000933	0.074503494
	Prostate cancer	0.026343065	0.090380777
	Glioma	0.0341811	0.11037402
	Bladder cancer	0.039534342	0.120567917
	Melanoma	0.044750179	0.129291784
	Endometrial cancer	0.070899918	0.149693223
	Thyroid cancer	0.096679561	0.151633926
c-Myc	Glioma	4.08E-05	0.000739343
	Prostate cancer	5.34E-05	0.00082811
	Bladder cancer	8.67E-05	0.001177013
	Colorectal cancer	0.000144239	0.001740896
	Melanoma	0.000375806	0.003711103
	Pancreatic cancer	0.00112724	0.009419015
	Small cell lung cancer	0.001589633	0.012333927
	Acute myeloid leukemia	0.003015012	0.02046923
	Chronic myeloid leukemia	0.005588405	0.033724684
	Endometrial cancer	0.008012913	0.041741077
	Thyroid cancer	0.008453836	0.041741077
	Non-small cell lung cancer	0.009749823	0.044128379
	Basal cell carcinoma	0.010714549	0.044764428

	Metabolism	P-value	Q-value
Oct4	Riboflavin metabolism	0.004694317	0.043807659
	Valine, leucine and isoleucine biosynthesis	0.006279489	0.05409284
	Alkaloid biosynthesis I	0.014959979	0.088173128
	Glutamate metabolism	0.02581504	0.125690898
	Taurine and hypotaurine metabolism	0.027950476	0.130417787
	Nitrogen metabolism	0.043415728	0.157699385
	Pantothenate and CoA biosynthesis	0.043415728	0.157699385
	Glycolysis / Gluconeogenesis	0.050990281	0.157699385
	Fatty acid elongation in mitochondria	0.053117858	0.157699385
	Carbon fixation	0.054124491	0.157699385
	gamma-Hexachlorocyclohexane degradation	0.054124491	0.157699385
	Pentose phosphate pathway	0.065970026	0.184690912
	Peptidoglycan biosynthesis	0.070985694	0.193885726
Sox2	Terpenoid biosynthesis	0.000125943	0.001437085
	Purine metabolism	0.000955779	0.005532097
	Biosynthesis of steroids	0.000994773	0.005532097
	Glycosaminoglycan degradation	0.002965456	0.007808706
	Alanine and aspartate metabolism	0.003650021	0.008924795
	Heparan sulfate biosynthesis	0.005707507	0.012211172
	Pyrimidine metabolism	0.015087251	0.027863228
	Valine, leucine and isoleucine biosynthesis	0.01546515	0.027863228
	Sphingolipid metabolism	0.030876111	0.042416303
	N-Glycan degradation	0.032750601	0.042416303
	One carbon pool by folate	0.036816085	0.043458077
	Glycosphingolipid biosynthesis - ganglioseries	0.054825575	0.055635592
	Glycolysis / Gluconeogenesis	0.082103148	0.07026365
Klf4	Glycolysis / Gluconeogenesis	7.86E-05	0.002156262
	3-Chloroacrylic acid degradation	0.000682765	0.01011149
	Methane metabolism	0.000923919	0.01011149
	beta-Alanine metabolism	0.00097197	0.01011149
	Valine, leucine and isoleucine degradation	0.001105189	0.01011149
	Propanoate metabolism	0.002544854	0.017462351
	Taurine and hypotaurine metabolism	0.007766217	0.047369277
	Fatty acid metabolism	0.008925326	0.048995237
	Butanoate metabolism	0.011202424	0.051246066
	Bile acid biosynthesis	0.024361043	0.089152672
	Glycerolipid metabolism	0.052695464	0.13529613
	Fructose and mannose metabolism	0.052695464	0.13529613
	1- and 2-Methylnaphthalene degradation	0.054222346	0.13529613
	Inositol phosphate metabolism	0.061479879	0.146540579
	Carbon fixation	0.069199005	0.149693223
	Pentose phosphate pathway	0.079845264	0.151140523
	Phenylpropanoid biosynthesis	0.089014041	0.151311
c-Myc	Glycolysis / Gluconeogenesis	3.57E-05	0.000739343
	Purine metabolism	0.008092346	0.041741077

Urea cycle and metabolism of amino groups	0.009728065	0.044128379
Methane metabolism	0.010164501	0.044165033
Methionine metabolism	0.012341479	0.04812936
Nitrogen metabolism	0.0145034	0.052514723
Biosynthesis of steroids	0.019510474	0.062333485
Oxidative phosphorylation	0.028035562	0.084364648
Streptomycin biosynthesis	0.038607013	0.110360869
Alanine and aspartate metabolism	0.059257135	0.152347888
3-Chloroacrylic acid degradation	0.060307648	0.152347888
Carbon fixation	0.082112772	0.178391112
gamma-Hexachlorocyclohexane degradation	0.082112772	0.178391112
Peptidoglycan biosynthesis	0.084179853	0.179295955

	Others	P-value	Q-value
Oct4	Ribosome	0.000786179	0.009782226
	B cell receptor signaling pathway	0.002600314	0.029119553
	Melanogenesis	0.010659012	0.07957645
	T cell receptor signaling pathway	0.053351551	0.157699385
	Circadian rhythm	0.08365107	0.223039133
Sox2	Amyotrophic lateral sclerosis (ALS)	0.002965456	0.007808706
	Huntington's disease	0.014698385	0.027863228
	Regulation of actin cytoskeleton	0.016298515	0.02789645
	Hematopoietic cell lineage	0.062510865	0.061139003
	GnRH signaling pathway	0.096010302	0.078252719
Klf4	Maturity onset diabetes of the young	0.079845264	0.151140523
	Olfactory transduction	0.090960887	0.151311
c-Myc	Ribosome	9.11E-12	9.90E-10
	Amyotrophic lateral sclerosis (ALS)	0.00059061	0.005346287
	DNA polymerase	0.006260947	0.035794719
	Type II diabetes mellitus	0.012687008	0.04812936
	Insulin signaling pathway	0.016069117	0.056307055
	Alzheimer's disease	0.016890911	0.057337082
	Maturity onset diabetes of the young	0.025467066	0.079039353
	Proteasome	0.046473954	0.12620662
	Melanogenesis	0.067334202	0.166232351
	Long-term potentiation	0.073549479	0.171575553
	Regulation of actin cytoskeleton	0.07423706	0.171575553