

Sample	Cell type	Marker gene
Organoid	Neuron	ELAVL3
Organoid	Neuron	MAP2
Organoid	Neuron	STMN2
Organoid	Peripheral neuron	ELAVL3
Organoid	Peripheral neuron	MAP2
Organoid	Peripheral neuron	SIX1
Organoid	Peripheral neuron	STMN2
Organoid	Neuronal progenitor	SOX2
Organoid	Pluripotent stem cell	SOX2
Organoid	Pluripotent stem cell	XACT
Organoid	Pluripotent stem cell	POU5F1
Organoid	Neural crest	SOX10
Organoid	Neural crest	TFAP2A
Organoid	Neural crest	TFAP2B
Organoid	Neural crest	PAX7
Organoid	Neural crest	KRT18
Organoid	Mesenchyme	FOXC1
Organoid	Mesenchyme	FOXC2
Organoid	Mesenchyme	TWIST1
Embryo	Neuron	TUBB3
Embryo	Neuron	ELAVL3
Embryo	Neuron	INA
Embryo	Neuron	STMN2
Embryo	Neuron	MAP2
Embryo	Peripheral neuron	ELAVL3
Embryo	Peripheral neuron	MAP2
Embryo	Peripheral neuron	SIX1
Embryo	Peripheral neuron	STMN2
Embryo	Neuronal progenitor	SOX2
Embryo	Neuronal progenitor	PAX6
Embryo	Neuronal progenitor	RFX4
Embryo	Neuronal progenitor	PTPRZ1
Embryo	Neural crest	SOX10
Embryo	Neural crest	TFAP2A
Embryo	Neural crest	TFAP2B
Embryo	Neural crest	PAX3
Embryo	Neural crest	GRHL2
Embryo	Mesenchyme	FOXC1
Embryo	Mesenchyme	FOXC2
Embryo	Mesenchyme	TWIST1
Embryo	Endo	FLT1
Embryo	Endo	PTPRM
Embryo	Endo	CLDN5
Embryo	Otic Placode	OTOGL
Embryo	Otic Placode	OC90
Embryo	PVM/MIC	RUNX1
Embryo	PVM/MIC	CSF1R

Table S1