

Supplemental Table 1: Item list

Items	Company	Item No.
Primary Antibodies		
Anti-Shh Antibody	Santa Cruz	sc-365112
Anti-PTCH Polyclonal Antibody	Thermofisher	PA1-46222
Anti-Smoothened antibody	Abcam	ab236465
Anti-Gli1	Abcam	ab273018
Anti-Occludin Antibody	Abcam	ab216327
Anti-Claudin3 Antibody	Thermofisher	PA5-16867
Anti-Claudin5 Antibody	Thermofisher	35-2500
Anti-NeuN antibody	Abcam	ab177487
Anti-GFAP Antibody	Abcam	ab7260
Anti- β -Actin Antibody	Santa Cruz	sc-47778
Anti-GAPDH Antibody	Affinity	AF7021
GSL Isolectin-B4	Thermofisher	L32473
Secondary Antibodies		
Anti-rabbit IgG, HRP-linked Antibody #7074	CST	7074s
Anti-mouse IgG, HRP-linked Antibody #7076	CST	7076s
Donkey Anti-Mouse IgG H&L (Alexa Fluor® 488)	Abcam	ab150105
Donkey Anti-Rabbit IgG H&L (Alexa Fluor® 568)	Abcam	ab175470
ELISA kits		
Human Sonic Hedgehog/Shh N-Terminus Quantikine ELISA Kit	Rnd systems	DSHH00
Human Estrogen ELISA Kit	Finetest	EH4184
Rat Albumin ELISA kit	Abcam	ab108789
Intervention drugs		
Cyclopamine	Shanghai YUANYE	B20547

Fulvestrant	Shanghai YUANYE	S41859
Estrogen	Shanghai YUANYE	S30633
Corn oil	Shanghai YUANYE	S50856

Cell culture		
DMEM high glucose (no phenol red, sodium pyruvate)	Procell	PM150225
Penicillin/streptomycin solution	Shanghai Zhong Qiao Xin Zhou Biotechnology Co.,Ltd	503
Fetal bovine serum	Shanghai Zhong Qiao Xin Zhou Biotechnology Co.,Ltd	25
Trypsin/EDTA digestion solution	Gibco	25200056
Hemoglobin, freeze dried	MP Biomedical	02151234-CF
HrSHH	Abcam	ab268966
