

Supplementary Table S1. Organoid media recipe.

Product	Supplier	Cat No.	Final Conc.
DMEM/F12 advanced	Thermo	12634010	
HEPES	Thermo	15630080	10 mM
Glutamax	Life Tech	35050061	1%
N2	Life Tech	17502048	1%
B27 minus VA	Thermo	12587001	1%
bFGF	R&D Systems	233-FB-010	2 ng/ml
FGF-10	Peptotech	100-26-5ugx2	10 ng/ml
hEGF	Sigma Aldrich	E9644	50 ng/ml
p38i (SB202190)	Sigma Aldrich	S7067-25mg	10 $\mu$ M
Nicotinamide (NICO)	Sigma Aldrich	N0636-100G	10 mM
A83-01	Sigma Aldrich	SML0788-5MG	500 nM
N-acetyl L-cysteine (NAC)	Sigma Aldrich	A9165	1.25 mM
hRSPO1	Peptotech	120-38-20ug	50 ng/ml
hNoggin	Peptotech	120-10C	100 ng/ml
$\beta$ Oestradiol	Sigma Aldrich	E2758	1 nM
Insulin transferrin selenium	Life Tech	41400045	2%