

Table S1. Hepatic organoids medium composition

Reagent	Company	Catalog No.	Working Conc.
Advanced DMEM/F12	Thermo Fisher	12634028	1×
Penicillin-Streptomycin	Thermo Fisher	15140163	1%
GlutaMAX™ Supplement	Thermo Fisher	35050061	1%
HEPES	Thermo Fisher	15630080	10 mM
N-2 Supplement	Thermo Fisher	17502048	1×
N-Acetylcysteine	Sigma-Aldrich	A9165	1 mM
[Leu15]-Gastrin I human	Sigma-Aldrich	G9145	10 nM
Recombinant human EGF	Peptotech	AF-100-15	50 ng/ml
Recombinant human HGF	Peptotech	100-39	25 ng/ml
B-27™ Supplement, minus vitamin A	Thermo Fisher	12587010	1×
A83-01	Tocris	2939	5 μ M
Nicotinamide	Sigma-Aldrich	N0636	10 mM
Forskolin	Sigma-Aldrich	F3917	10 μ M
Recombinant human FGF-basic	Peptotech	100-18B	10 ng/ml
Oncostatin M	R&D system	295-OM	10 ng/ml
ITS	Thermo Fisher	41400045	1×
Dexamethasone	Sigma-Aldrich	D4902	100 nM

Table S2. A list of antibodies

Antibodies	Company	Catalog No.	Dilution
anti-ALB	Bethyl lab	A80-129a	1 : 100
anti-E-cadherin	BD biosciences	610181	1 : 200

Table S3. A list of primer sequences

Gene	Primer (forward)	Primer (reverse)
<i>AFP</i>	AGCTTGGTGGTGGATGAAAC	CCCTCTCAGCAAAGCAGAC
<i>ALB</i>	TTTATGCCCCGGAACCTTT	AGTCTCTGTTTGGCAGACGAA
<i>CK18</i>	GAGCTGCTCCATCTGTAGGG	CACAGTCTGCTGAGGTTGGA
<i>CK19</i>	CGCGGCGTATCCGTGTCCTC	AGCCTGTTCCGTCTCAAACCTGGT
<i>CYP3A4</i>	CTTCATCCAATGGACTGCATAAAT	TCCAAGTATAACACTCTACACAGACAA
<i>RBP4</i>	GAGTTCTCCGTGGACGAGAC	TCCAGTGGTCATCATTTCCTTTC
<i>β-ACTIN</i>	GGACTTCGAGCAAGAGATGG	AGCACTGTGTTGGCGTACAG

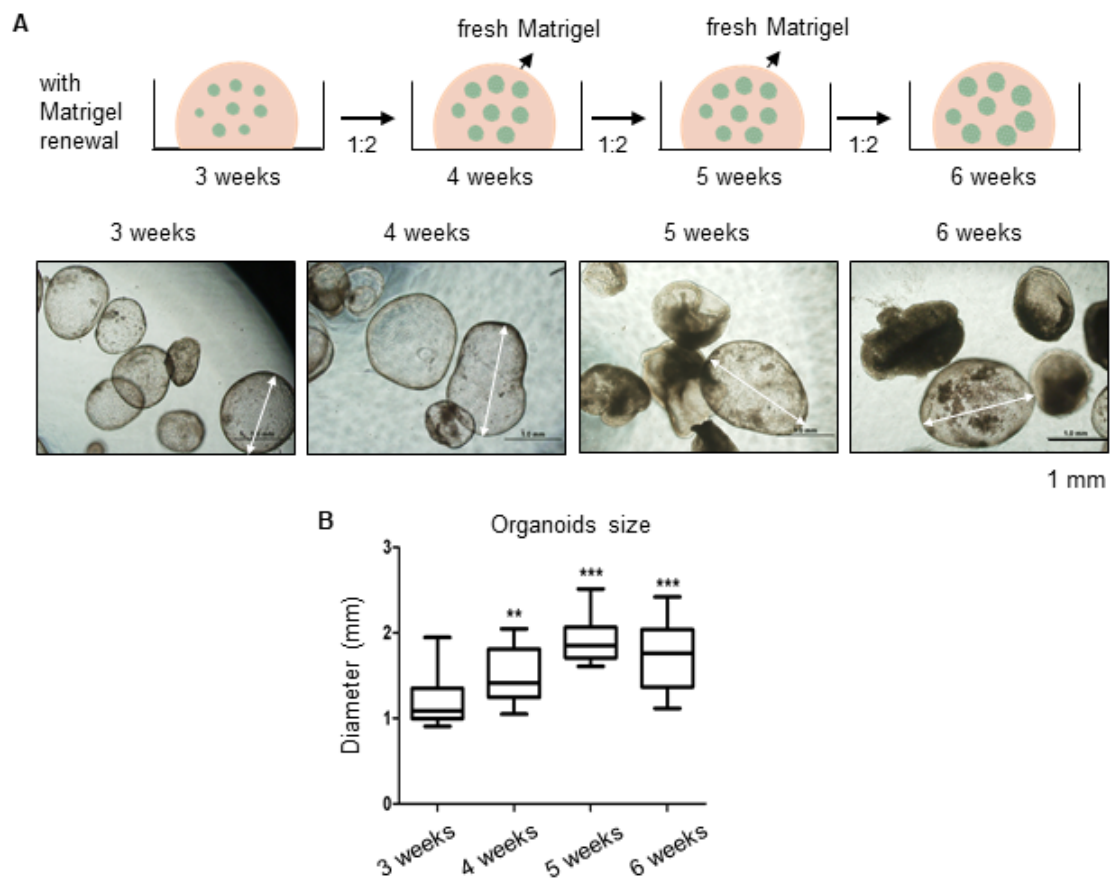


Fig. S1. Long-term culture of hepatic organoids without passing for up to six weeks. (A) Schematic diagram of long-term culture of the organoids (*upper*). Representative organoids morphology from three to six weeks (*lower*). Arrows indicate the largest organoid in each field. (B) Average organoid size was examined weekly. Data are the mean \pm SEM ($n=18$) and analyzed by Student's t-test, ** $p < 0.01$; and *** $p < 0.001$.