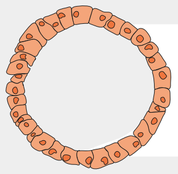
adult stem cell-derived organoids

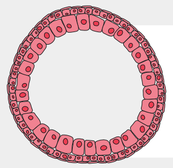
media recipe quick reference guide

MBL

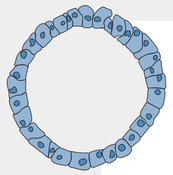
https://ruo.mbl.co.jp/



oral mucosa
EGF, FGF-2, FGF-10, noggin, R-spondin 1
Driehuis *et al.* 2019



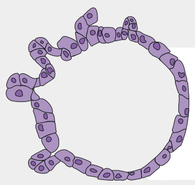
lung
FGF-7, FGF-10, noggin, R-spondin 1
Sachs *et al.* 2019



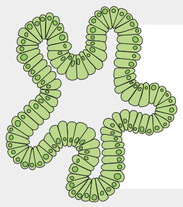
liver
EGF, FGF-10, HGF, noggin, R-spondin 1, Wnt3a
Huch *et al.* 2015

liver (hepatocyte)
EGF, FGF-7, FGF-10, HGF, TGF-α, R-spondin 1
Hu *et al.* 2018

extrahepatic biliary tree
R-spondin 1
Sampaziotis *et al.* 2017

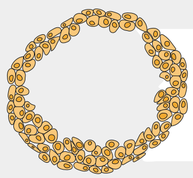


pancreatic duct
EGF, FGF-10, noggin, R-spondin 1, Wnt3a
Boj *et al.* 2015

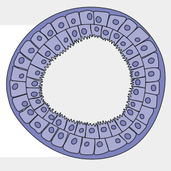


intestine
EGF, noggin, R-spondin 1, Wnt3a
Sato *et al.* 2011

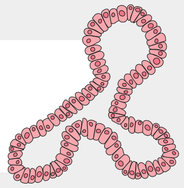
EGF, FGF-2, IGF-1, noggin, R-spondin 1, Wnt3a
Fujii *et al.* 2018



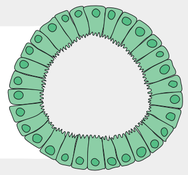
urothelium
FGF-2, FGF-7, FGF-10
Mullenders *et al.* 2019



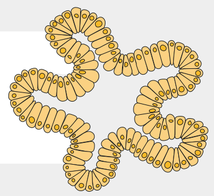
esophagus
EGF, FGF10, noggin, R-spondin1, Wnt3a
Jiang *et al.* 2017



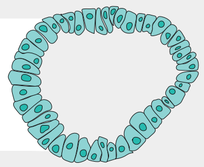
mammary
EGF, FGF-7, FGF-10, NRG-1, noggin, R-spondin 1
Sachs *et al.* 2018



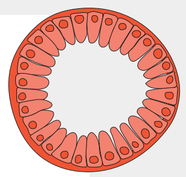
gallbladder
EGF, FGF-10, HGF, noggin, R-spondin 1
Lugli *et al.* 2016



stomach
EGF, FGF-10, noggin, R-spondin 1, Wnt3a
Bartfeld *et al.* 2015



kidney tubule
EGF, FGF-10, R-spondin 1
Schutgens *et al.* 2019



endometrium
EGF, FGF10, HGF, noggin, R-spondin 1
Turco *et al.* 2017

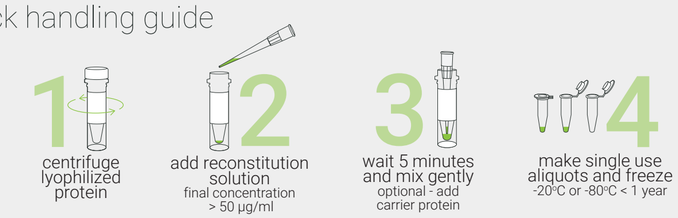
fallopian tube
EGF, FGF10, noggin, R-spondin 1, Wnt3a
Kessler *et al.* 2015

ovarian surface epithelium
EGF, NRG-1, noggin, R-spondin 1, Wnt3a
Kooper *et al.* 2019

three steps for choosing your growth factors

1. consider why you are using each growth factor: research alternative forms, optimize protein concentration and consider sources of experimental variability
2. look for evidence of protein quality and complete product data
   - ☐ quantitative bioactivity data with EC50
   - ☐ clear SDS-PAGE gel, with high protein loading and staining so you can see spurious bands
   - ☐ purity data such as mass spec to check protein identity, analytical reverse phase and endotoxin testing with limit <0.05 EU/µg (if relevant)
3. find a reliable supplier with good scientific support and rapid delivery (you don't want to run out mid-experiment!)

quick handling guide



reconstitution calculator

for full reconstitution guidance see qkine.com/your-proteins

mass in vial (µg) ÷ desired concentration (µg/ml) × 1000 = volume to add (µl)

1mg = 1000µg 1µg = 1000ng

how is Qkine improving growth factors for organoids

animal-free
Unmatched quality and reliability. All our proteins are made in a dedicated animal-free laboratory in Cambridge, UK.

total-transparency
Know what you're giving your cells. Stringent purity and bioactivity data for all proteins.

protein innovation
Solving stem cell culture challenges with optimised forms and animal-free firsts.

157059-25081000