

Meritxell Huch, PhD

1 | General information

Contact details: Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)
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Current position: Lise Meitner Max Planck Research Group Leader, Max Planck Gesellschaft, Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)

Researcher unique identifier(s): ORCID-ID: 0000-0002-1545-5265

2 | Academic education

2003 – 2007 PhD Centre for Genomic Regulation (CRG), University of Barcelona, Barcelona, Spain

2002 – 2003 Master of Advanced Studies - University of Barcelona (UB), Spain

1996 – 2001 Study of Pharmaceutical Science, University of Barcelona (UB), Spain

3 | Advanced academic qualifications:

2007 PhD thesis “*Study of the antitumoral efficacy of adenoviral vectors targeting FGFR and the selectivity of AdCK7pLuc and AduPARpLuc in pancreatic cancer models*”, Centre for Genomic Regulation (CRG), University of Barcelona, Barcelona, Spain (Supervisor: Cristina Fillat)

2003 Master of Advanced Studies “*Study of the antitumoral efficacy of adenoviral vectors targeting FGFR*”, University of Barcelona (UB), Spain (Supervisor: Cristina Fillat)

2001 BSc in Pharmaceutical Science, University of Barcelona (UB), Spain (Supervisor: Diego Haro)

4 | Postgraduate professional career:

Since 2019 Lise Meitner Max Planck Research Group Leader, Max Planck Gesellschaft

2014 – 2020 Sir Henry Dale Wellcome Trust Group Leader, The Gurdon Institute, University of Cambridge, UK. Affiliated Group Leader at The Wellcome Trust/MRC Cambridge Stem Cell Institute. Member of the Department of Physiology, Developmental Biology and Neurosciences, University of Cambridge, UK

2008 – 2014 Postdoctoral Fellow (Marie Curie Fellow-IEF). Hubrecht Institute for Developmental Biology and Stem Cell Research. Utrecht, The Netherlands. Advisor: Prof Hans Clevers

2003 – 2007 PhD Student (Spanish Ministry of Health fellow), Centre for Genomic Regulation (CRG), Barcelona, Spain

2002 – 2003 Master of Advanced Studies Student (Catalan government fellow), Centre for Genomic Regulation (CRG), Barcelona, Spain

2000 – 2001 Student Internship (Final year student fellow), Department of Biochemistry and Molecular Biology, School of Pharmacy, University of Barcelona (Advisor: Diego Haro)

5 | Other:

Awards/Honors

- The BINDER Innovation Prize 2019, German Society for Cell Biology (DGZ) (2019)
- Researcher of the Year, Cambridge Independent Science and Technology Awards (2018)
- EMBO Young Investigator Award (2018)
- Dame Sheila Sherlock Prize 2018, The British Association for the Study of the Liver (BASL) (2018)
- The Women in Cell Biology Early Career Medal for 2018, The British Society for Cell Biology (2018)
- The Hamdan Award for Medical Research Excellence Hamdan Awards (2016)
- Wellcome-Beit Prize Wellcome Trust (2014)

- NC3Rs International Prize. National Centre for the Replacement, Refinement & Reduction of Animals in Research, UK (2014)

Selected other professional activities:

- Lecturer for RegBioMed Master Program from TUD Dresden (January 2021 - 2022)
- Associate Editor at npj Regenerative Medicine, Nature publishing group (since 2021)
- Associate Editor at StemJournal (since 2021)
- Editor Stem Cell Reports - ISSCR open access journal (since 2020)
- Board of Cell Stem Cell Journal, Cell press (since 2020)
- Reviewer for European Association for the Study of the Liver-International liver conference EASL-ILC (since 2020)
- The Armenise-Harvard Foundation for early and mid-career fellowships (2018 – 2020)
- Instructor at Cambridge Bioscience Organoid workshop (2016, 2017)
- University of Cambridge. Lecturer for L6/P6 Development: Cell Differentiation & Organogenesis (2014 – 2019)
- Editor Developmental Biology (special issue on organoids) (2016)
- Editor Current Pathobiology Reports (special issue on organoid cultures) (2016)
- Editor Cogent Biology (2014)
- Utrecht University Summer School Course in Regenerative Medicine Utrecht University Medical Centre-UMC (2012)

6 | Selected publications:

1. Belenguer G, Mastrogiovanni G, Pacini C, Hall Z, Dowbaj AM, Arnes-Benito R, Slijukic A, Prior N, Kakava S, Bradshaw CR, Davies S, Vacca M, Saeb-Parsy K, Koo BK, **Huch M**. RNF43/ZNRF3 loss predisposes to hepatocellular-carcinoma by impairing liver regeneration and altering the liver lipid metabolic ground-state. **Nat Commun** 2022; 13(1):334
2. Cordero-Espinoza L, Dowbaj AM, Kohler TN, Strauss B, Sarlidou O, Belenguer G, Pacini C, Martins NP, Dobie R, Wilson-Kanamori JR, Butler R, Prior N, Serup P, Jug F, Henderson NC, Hollfelder F, **Huch M**. Dynamic cell contacts between periportal mesenchyme and ductal epithelium act as a rheostat for liver cell proliferation. **Cell Stem Cell** 2021; 4;28(11):1907-1921.e8
3. Georgakopoulos N, Prior N, Angres B, Mastrogiovanni G, Cagan A, Harrison D, Hindley CJ, Arnes-Benito R, Liao SS, Curd A, Ivory N, Simons BD, Martincorena I, Wurst H, Saeb-Parsy K, **Huch M**. Long-term expansion, genomic stability and in vivo safety of adult human pancreas organoids. **BMC Dev Bio** 2020; 20(1):4
4. Aloia L, McKie MA, Vernaz G, Cordero-Espinoza L, Aleksieva N, van den Aamee J, Antonica F, Font-Cunill B, Raven A, Aiese Cigliano R, Belenguer G, Mort RL, Brand AH, Zernicka-Goetz M, Forbes SJ, Miska EA, **Huch M**. Epigenetic remodelling licences adult cholangiocytes for organoid formation and liver regeneration. **Nat Cell Biol** 2019; 21(11):1321-1333
5. Prior N, Hindley CJ, Rost F, Meléndez E, Lau WWY, Göttgens B, Rulands S, Simons BD, **Huch M**. Lgr5+ stem and progenitor cells reside at the apex of a heterogeneous embryonic hepatoblast pool. **Development** 2019; 146(12)
6. Broutier L, Mastrogiovanni G, Verstegen MM, Francies HE, Gavarró LM, Bradshaw CR, Allen GE, Arnes-Benito R, Sidorova O, Gaspersz MP, Georgakopoulos N, Koo BK, Dietmann S, Davies SE, Prasadom RK, Lieshout R, IJzermans JNM, Wigmore SJ, Saeb-Parsy K, Garnett MJ, van der Laan LJ, **Huch M**. Human primary liver cancer-derived organoid cultures for disease modeling and drug screening. **Nat Med** 2017; 23(12):1424-1435
7. Broutier L, Andersson-Rolf A, Hindley CJ, Boj SF, Clevers H, Koo BK, **Huch M**. Culture and establishment of self-renewing human and mouse adult liver and pancreas 3D organoids and their genetic manipulation. **Nat Protoc** 2016; 11(9):1724-43
8. **Huch M**, Gehart H, van Boxtel R, Hamer K, Blokzijl F, Verstegen MM, Ellis E, van Wenum M, Fuchs SA, de Ligt J, van de Wetering M, Sasaki N, Boers SJ, Kemperman H, de Jonge J, IJzermans JN, Nieuwenhuis EE, Hoekstra R, Strom S, Vries RR, van der Laan LJ, Cuppen E, Clevers H. Long-Term Culture of Genome-Stable Bipotent Stem Cells from Adult Human Liver. **Cell** 2015; 160(1-2):299-312

9. **Huch M***, Dorrell C*, Boj SF, van Es JH, Li VSW, van de Wetering M, Sato T, Hamer K, Sasaki N, Finegold MJ, Haft A, Vries R, Grompe M, Clevers H. *In vitro* expansion of single Lgr5+ liver stem cells induced by Wnt-driven regeneration. **Nature** 2013; 494:247-50
10. Barker N*, **Huch M***, Kujala P, van de Wetering M, Snippert HJ, van Es JH, Sato T, Stange DE, Begthel H, van den Born M, Danenberg E, van den Brink S, Korving J, Abo A, Peters PJ, Wright N, Poulsom R, Clevers H. Lgr5(+ve) stem cells drive self-renewal in the stomach and build long-lived gastric units *in vitro*. **Cell Stem Cell** 2010; 6(1):25-36

*contributed equally

Patents

1. **Huch M**, Boj, S, Clevers H. Improved culture method for organoids. Patent n: PCT/EP2015/060815. WO2015/173425 (2015)
2. **Huch M**, Sato T, Karthaus W, Clevers H. Culture medium for Stem Cells. Patent n: PCT/IB2012/052950. WO2012/168930 (2012)
3. **Huch M**, Clevers H. Liver organoid, uses thereof and culture method for obtaining them. Patent n: PCT/IB2011/002167. WO2012/014076 (2012)
4. **Huch M**, Sato T, Clevers H. Culture medium for epithelial stem cells and organoids comprising said stem cells. Patent n: PCT/NL2010/000017. WO2010/090513 (2010)