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Miguel obtained his bachelor in Medicine and Surgery from University of Navarra, Pamplona (Spain), and his medical specialization in Clinical Immunology from Hospital de la Princesa, Madrid (Spain). During his medical specialization, he did his PhD in Biochemistry and Molecular Biology at University Autonoma of Madrid, and then moved to the UK to do his postdoctoral study on hypoxia signaling at the Imperial College London lab of Prof. Patrick Maxwell. Before co-founding 3DC STAR Lab at BGI Shenzhen in China Miguel was Professor at the Guangzhou Institutes of Biomedicine and Health (Chinese Academy of Sciences) from 2008-2023.

In addition, Miguel holds part time/honorary positions at different national and international institutions including University of Jilin in Changchun (China), Chulalongkorn University (Bangkok, Thailand), Hannover Medical School (Germany), and the Guangzhou Institutes of Biomedicine and Health (China). Miguel is recipient of the Outstanding Science and Technology Award of the Chinese Academy of Sciences and the National Friendship Award of China, among other relevant awards.

The team co-led by Miguel and his colleagues at 3DC STAR Lab aims to combine biological models and state-of-the-art technologies to understand and manipulate the mechanisms driving mammalian development, tissue degeneration and regeneration.

Representative publications last three years (*corresponding author):

1. Lai Y, Ramírez-Pardo I, Isern J, An J, Perdiguero E, Serrano AL, Li J, García-Domínguez E, Segalés J, Guo P, Lukesova V, Andrés E, Zuo J, Yuan Y, Liu C, Viña J, Doménech J, Gómez- Cabrera MC, Song Y, Liu L, Xu X, Muñoz-Cánoves P*, **Esteban MA***. *Multimodal cell atlas of the ageing human skeletal muscle*. **Nature**, 2024. 629 (8010): 154-164.
2. Xu J, Guo P*, Hao S, Shangguan S, Shi Q, Volpe G, Huang K, Zuo J, An J, Yuan Y, Cheng M, Deng Q, Zhang X, Lai G, Nan H, Wu B, Shentu X, Wu L, Wei X, Jiang Y, Huang X, Pan F, Song Y, Li R, Wang Z, Liu C, Liu S, Li Y, Yang T, Xu Z, Du W, Li L, Tanveer A, You K, Dai Z, Li L, Qin B, Li Y, Lai L, Qin D, Chen J, Fan R, Li Y, Hou J, Ott M, Sharma A, Cantz T, Schambach A, Kristiansen A, Hutchins AP, Göttgens B, Maxwell PH, Hui L, Xu X*, Liu L*, Chen A*, Lai Y*, **Esteban MA***. A

- spatiotemporal atlas of mouse liver homeostasis and regeneration. **Nature Genetics**, 2024. 56 (5): 953-969. [Cover story](#)*
3. Wu B, Shentu X, Nan H, Guo P, Hao S, Xu J, Shangguan S, Cui L, Deng Q, Wu Y, Liu C, Song Y, Wang Z, Yuan Y, Ma W, Li R, Du W, La T, Tao Y, Liu Ch, Lai Y*, Liu L*, **Esteban MA***, Hui L*. *High-definition spatiotemporal atlas of cholestatic injury and repair. **Nature Genetics**, 2024. 56 (5):938-952. [Back-to-back in the same issue with the paper above](#)*
 4. Yang Y, Jia W, Luo Z, Li Y, Liu H, Fu L, Li J, Jiang Y, Lai J, Li H, Saeed BJ, Zou Y, Lv Y, Wu L, Zhou T, Shan Y, Liu C, Lai Y, Liu L, Hutchins AP, **Esteban MA***, Mazid MA*, Li W*. VGLL1 cooperates with TEAD4 to control human trophectoderm lineage specification. **Nature Communications**, 2024. 15 (1): 583.
 5. Cao J, Li W, Li J, Abdul M, Li C, Jiang Y, Jia W, Wu L, Liao Z, Sun S, Song W, Fu J, Wang Y, Lu Y, Xu Y, Nie Y, Bian X, Gao C, Zhang X, Zhang L, Shang S, Li Y, Fu L, Liu H, Lai J, Wang Y, Yuan Y, Jin X, Li Y, Liu C, Lai Y, Shi X, Maxwell PH, Xu X, Liu L, Poo M, Wang X, Sun Q*, **Esteban MA***, Liu Z*. *Live birth of chimeric monkey with high contribution from embryonic stem cells. **Cell**, 2023. 186 (23): 4996-5014. [Cover story this paper The first chimera monkey.](#)*
 6. Wang J, Xie W, Li N, Li W, Zhang Z, Fan N, Ouyang Z, Zhao Y, Lai C, Li H, Chen M, Quan L, Li Y, Jiang Y, Jia W, Fu L, Abdul M, Zhu Y, Maxwell PH, Pan G*, **Esteban MA***, Dai Z*, Lai L*. *Generation of a humanized mesonephros in pigs from induced pluripotent stem cells via embryo complementation. **Cell Stem Cell**, 2023. 30 (9): 1235-1245. [Cover story This paper sheds light on generating human kidney in pig by chimera formation.](#)*
 7. Chen A, Liao S, Cheng M, Ma K, Wu L, Lai Y, Qiu X, Yang J, Xu J, Hao S, Wang X, Lu H, Chen X, Liu X, Huang X, Li Z, Hong Y, Jiang Y, Peng J, Liu S, Shen M, Liu C, Li Q, Yuan Y, Wei X, Zheng H, Feng W, Wang Z, Liu Y, Wang, Yang Y, Xiang H, Han L, Qin B, Guo P, Lai G, Muñoz-Cánoves P, Maxwell P, Thiery J, Wu Q, Zhao F, Chen B, Li M, Dai X, Wang S, Kuang H, Hui J, Wang L, Fei J, Wang O, Wei X, Lu H, Wang B, Liu S, Gu Y, Ni M, Zhang W, Mu F, Yin Y, Yang H, Lisby M, Cornall R, Mulder J, Uhlen M, **Esteban MA***, Li Y*, Liu L*, Xu X*, Wang J*. *Spatiotemporal transcriptomic atlas of mouse organogenesis using DNA nanoball patterned arrays. **Cell**, 2022. 185 (10): 1777-1792. [Cover story](#)*

8. Mazid MA*, Ward C, Luo Z, Liu C, Li Y, Lai Y, Wu L, Li J, Jia W, Jiang Y, Liu H, Fu L, Yang Y, Ibañez D, Lai J, Wei X, An J, Guo P, Yuan Y, Deng Q, Wang Y, Liu Y, Gao F, Wang J, Zaman S, Qin B, Wu G, Maxwell P, Xu X, Liu L*, Li W*, **Esteban MA***. *Rolling back of human pluripotent stem cells to an 8-cell embryo-like stage. **Nature**, 2022. 605 (7909): 315-324.* **This paper published the first human totipotent cells. (ESCs mimic 8 cell stage embryo)**
9. Han L, Wei X, Liu C, Volpe G, Zhuang Z, Zou X, Wang Z, Pan T, Yuan Y, Zhang X, Fan P, Guo P, Lai Y, Lei Y, Liu X, Yu F, Shangguan S, Lai G, Deng Q, Liu Y, Wu L, Shi Q, Yu H, Huang Y, Cheng M, Xu J, Liu Y, Wang M, Wang C, Zhang Y, Xie D, Yang Y, Yu Y, Zheng H, Wei Y, Huang F, Lei J, Huang W, Zhu Z, Lu H, Wang B, Wei X, Chen F, Yang T, Du W, Chen J, Xu S, An J, Ward C, Wang Z, Pei Z, Wong C, Liu L, Zhang H, Liu M, Qin B, Schambach A, Isern J, Feng L, Liu Y, Guo X, Liu Z, Sun Q, Maxwell P, Barker N, Muñoz- Cánoves P, Gu Y, Mulder J, Uhlen M, Tan T, Liu S, Yang H, Wang J, Hou Y*, Xu X*, **Esteban MA***, Liu L*. *Cell transcriptomic atlas of the non-human primate *Macaca fascicularis*. **Nature**, 2022. 604 (7907): 723-731.*