

SEUNG-WOO CHO

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College of Life Science & Biotechnology
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EDUCATION

2001. 3. – 2006. 2. **Seoul National University**
 Ph.D. in School of Chemical Engineering
1999. 3. – 2001. 2. **Seoul National University**
 M.S. in School of Chemical Engineering
1995. 3. – 1999. 2. **Seoul National University**
 B.S. in School of Chemical Engineering

PROFESSIONAL EXPERIENCE

2021. 6. – present **Ministry of Food & Drug Safety**
 Drug/Biopharmaceutical Committee Member
2020. 9. – present **Yonsei University**
 Underwood Distinguished Professor
2020. 3. – present **CellArtgen**
 Chief Technology Officer (CTO)
2020. 3. – 2022. 2. **Yonsei University**
 Associate Dean in College of Life Science & Biotechnology
2018. 9. – 2019. 8. **Massachusetts Institute of Technology**
 Visiting Professor in Research Laboratory of Electronics (RLE)
2017. 1. – present **Center for Nanomedicine, Institute for Basic Science (IBS)**
 Associate Faculty
2016. 8. – 2018. 8. **National Research Foundation (NRF) of Korea**
 Review Board (RB)
2016. 3. – 2018. 2. **Yonsei University**
 Director of Life Science & Biotechnology Division

- 2014. 3. – 2016. 2.** **Yonsei University College of Medicine**
Adjunct Professor in Department of Neurosurgery
- 2010. 3. – present** **Yonsei University**
Professor in Department of Biotechnology
- 2007. 1. – 2010. 2.** **Massachusetts Institute of Technology**
Postdoctoral Associate in Department of Chemical Engineering
(Advisors: Prof. Robert S. Langer & Prof. Daniel G. Anderson)

HONORS AND AWARDS

2022. 06. Award for Scientist of the Month, Ministry of Science and ICT
2020. 09. Underwood Distinguished Professor, Yonsei University
2020. 02. Best Research Award, Yonsei University
2018. 02. Best Lecture Award & Best Research Award, Yonsei University
2017. 12. Overseas Research Professor Fellowship, LG Yonam Foundation
2017. 12. The National Academy of Engineering of Korea, 100 Technologies and Key Engineers for the Year 2025
2017. 02. Best Research Award (Hi-Citation), Yonsei University
2016. 03. Award for Young Medical Scientists, The 9th Asan Award in Medicine (2016)
2016. 02. Best Research Award (Hi-Citation), Yonsei University
2015. 01. Best Research Award, Yonsei University
2014. 10. Young Investigator Award, The Korean Society for Biotechnology and Bioengineering
2012. 02. Best Lecture Award, Yonsei University

RESEARCH INTEREST

Tissue engineering, Stem cell engineering, Cell reprogramming, Biomaterial science, Organoid/organ-on-a-chip, Drug/gene delivery

RESEARCH ACHIEVEMENTS

Peer-reviewed SCIE papers 189

Pending/filed patents 124, Technology transfer 5

Total citation 10809, h-index 56, i10-index 151 (Google Scholar, 2023. 1.)

SELECTED PUBLICATIONS (CORRESPONDING AUTHOR)

1. Jin Y, Kim H, Min S, Choi YS, Seo SJ, Jeong E, Kim SK, Lee HA, Jo SH, Park JH, Park BW, Sim WS, Kim JJ, Ban K, Kim YG, Park HJ*, **Cho SW***. Three-dimensional heart extracellular matrix enhances chemically induced direct cardiac reprogramming. [Science Advances](#) 2022;8(50):eabn5768.
2. Hwang JC, Kim M, Kim S, Seo H, An S, Jang EH, Han SY, Kim MJ, Kim NK, **Cho SW***, Lee S*, Park JU*. In-situ diagnosis and simultaneous treatment of cardiac diseases using a single device platform. [Science Advances](#) 2022;8(37):eabq0897.

3. Kim S, Min S, Choi YS, Jo SH, Jung JH, Han K, Kim J, An S, Ji YW, Kim YG, **Cho SW**. Tissue extracellular matrix hydrogels as alternatives to Matrigel for culturing gastrointestinal organoids. [Nature Communications](#) 2022;13(1):1692. **(Featured in Editors' Highlights "From molecules and cells to organisms")**
4. Kim J, Lee KT, Lee JS, Shin J, Cui B, Yang K, Choi YS, Choi N, Lee SH, Lee JH, Bahn YS*, **Cho SW***. Fungal brain infection modelled in a human-neurovascular-unit-on-a-chip with a functional blood–brain barrier. [Nature Biomedical Engineering](#) 2021;5:830-846. **(2021 August issue Cover)**
5. Cho AN, Jin Y, An Y, Kim J, Choi YS, Lee JS, Kim J, Choi WY, Koo DJ, Yu W, Chang GE, Kim DY, Jo SH, Kim J, Kim SY, Kim YG, Kim JY, Choi N, Cheong E, Kim YJ, Je H, Kang HC, **Cho SW**. Microfluidic device with brain extracellular matrix promotes structural and functional maturation of human brain organoids. [Nature Communications](#) 2021;12:4730.
6. Baik S, Lee J, Jeon EJ, Park BY, Kim DW, Song JH, Lee HJ, Han SY, **Cho SW***, Pang C*. Diving beetle-like miniaturized plungers with reversible, rapid biofluid capturing for machine-learning based care of skin disease. [Science Advances](#) 2021;7:eabf5695.
7. Jin Y, Shahriari D, Jeon EJ, Park S, Choi YS, Back J, Lee H, Anikeeva P*, **Cho SW***. Functional skeletal muscle regeneration with thermally drawn porous fibers and reprogrammed muscle progenitors for volumetric muscle injury. [Advanced Materials](#) 2021;33(14):2007946. **(Front Cover)**
8. Wang Y, Jeon EJ, Hwang HG, Lee JH, **Cho SW***, Lee H*. Phenolamine superglue inspired by insect sclerotization process. [Advanced Materials](#) 2020;32(43):2002118. **(Back Cover)**
9. Jia J, Jeon EJ, Li M, Richards DJ, Lee S, Jung Y, Barrs RW, Coyle R, Li X, Chou JC, Yost MJ, Gerecht S, **Cho SW***, Mei Y*. Evolutionarily conserved sequence motif analysis guides development of chemically defined hydrogels for therapeutic vascularization. [Science Advances](#) 2020;6:eaaz5894.
10. Baek J, Cho Y, Park HJ, Choi G, Lee JS, Lee M, Yu SJ, **Cho SW***, Lee E*, Im SG*. A surface-tailoring method for rapid non-thermosensitive cell sheet engineering via functional polymer coatings. [Advanced Materials](#) 2020;32(16):1907225.
11. Kang B, Shin J, Park HJ, Rhyou C, Kang D, Lee SJ, Yoon YS, **Cho SW***, Lee H*. High-resolution acoustophoretic 3D cell patterning to construct functional collateral cylindroids for ischemia therapy. [Nature Communications](#) 2018;9(1):5402.
12. Jin Y, Lee JS, Kim J, Min S, Wi S, Yu JH, Chang GE, Cho AN, Choi Y, Ahn DH, Cho SR, Cheong EJ, Kim YG, Kim HP, Kim Y, Kim DS, Kim HW, Quan Z, Kang HC*, **Cho SW***. Three-dimensional brain-like microenvironments facilitate the direct reprogramming of fibroblasts into therapeutic neurons. [Nature Biomedical Engineering](#) 2018;2:522-539. **(Featured as Editorial Image)**