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Senior Research Scientist
Natural Product Research Center
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PROFESSIONAL EXPERIENCE

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|---------------------|---|
| Nov 2017 – present | Senior Research Scientist (PI)
Natural Product Research Center, KIST |
| Mar 2023 – present | Adjunct Professor
Dept. of Convergence Medicine, Yonsei University Wonju College of Medicine |
| Feb 2014 – Oct 2017 | Postdoctoral fellow
Donnelly Centre for Cellular & Biomolecular Research, University of Toronto |
| Mar 2013 – Oct 2013 | Postdoctoral fellow
Natural Science Research Institute, KAIST |

EDUCATION

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|------|---|
| 2013 | Ph.D. in Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST) |
| 2006 | B.S. in Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST) |

PUBLICATIONS

- 22.** Lim Y, Kang TK, Kim MI, Kim D, Kim JY, Jung SH, Park K, Lee WB, **Seo MH**, Massively parallel screening of TIR-derived peptides reveals vast TLR-targeting immunomodulatory peptides, *bioRxiv* 2024.05.21.595261 (2024).
- 21.** Lim Y, Kim JY, Jung YH, Lee JH, Baek MS, Jung JH, Kim HY, Lee W, Park K, **Seo MH**, Q-SHINE: A versatile sensor for glutamine measurement via ligand-induced dimerization. *Sens. Actuators B Chem.* 390, 133951 (2023).
- 20.** Kannan P, Oh J, Yeon YJ, Park YI, **Seo MH**, Park K, Computational identification of key residues regulating fluorescence emission in a red/green cyanobacteriochrome. *Proteins Struct. Funct. Bioinforma.* 92(1), 106-116 (2023).
- 19.** Choi H, Ju S, Kang K, **Seo MH**, Kim JM, Miyoshi E, Yeo MK, Park SY, Terminal fucosylation of haptoglobin in cancer-derived exosomes during cholangiocarcinoma progression. *Front. Oncol.* 13, 1–12 (2023).
- 18.** Oh J, Durai P, Kannan P, Park J, Yeon YJ, Lee WK, Park K, **Seo MH**, Domain-wise dissection of thermal stability enhancement in multidomain proteins, *Int. J. Biol. Macromol.* 237, 124141 (2023).

17. Jung YH, Choi Y, Seo HD, **Seo MH***, Kim HS*, A conformation-selective protein binder for a KRAS mutant inhibits the interaction between RAS and RAF, *Biochem. Biophys. Res. Commun.* 645, 110–117 (2023). (***Co-correspondance**)
16. Nam J, Alam ST, Kang K, Choi J, **Seo MH**, Anti-staphylococcal activity of a cyclic lipopeptide, C₁₅-bacillomycin D, produced by *Bacillus velezensis* NST6, *J. Appl. Microbiol.* 131, 93-104 (2021).
15. Choi J, Nam J, **Seo MH**, Complete genome sequence of *Bacillus velezensis* NST6 and comparison with the species belonging to operational group *B. amyloliquefaciens*, *Genomics* 113(1 Pt1), 380-386 (2021).
14. Kataria M, Mouilleron S, **Seo MH**, Corbi C, Kim PM, Uhlmann F, A PxL motif promotes timely cell cycle substrate dephosphorylation by the Cdc14 phosphatase, *Nat. Struct. Mol. Biol.* 25(12), 1093-1102 (2018).
13. **Seo MH**, Kim PM, The present and the future of motif-mediated protein-protein interactions, *Curr. Opin. Struct. Biol.* 50, 162-170 (2018).
12. Davey NE*, **Seo MH***, Yadav VK*, Jeon J, Nim S, Krystkowiak I, Blikstad C, Dong D, Markova N, Kim PM, Ivarsson Y, Discovery of short linear motif-mediated interactions through phage display of intrinsically disordered regions of the human proteome, *FEBS J.* 284, 485-498 (2017). (***Co-first author**)
11. **Seo MH**, Nim S, Jeon J, Kim PM, Large-Scale Interaction Profiling of Protein Domains Through Proteomic Peptide-Phage Display Using Custom Peptidomes, *Methods Mol. Biol.* 1518, 213-226 (2017).
10. Sun MG*, **Seo MH***, Nim S, Corbi-Verge C, Kim PM, Protein engineering by highly parallel screening of computationally designed variants, *Sci. Adv.* 20;2(7):e1600692 (2016). (***Co-first author**)
9. Nim S, Jeon J, Corbi-Verge C, **Seo MH**, Ivarsson Y, Moffat J, Tarasova N, Kim PM, Pooled screening for antiproliferative inhibitors of protein-protein interactions, *Nat. Chem. Biol.* 12(4), 275-281 (2016).
8. **Seo MH**, Park J, Kim E, Hohng S, Kim HS, Conformational dynamics of proteins dictate the binding affinity for a ligand, *Nat. Commun.* 5, 3724 (2014).
7. Choi JM*, **Seo MH***, Kyeong HH, Kim E, Kim HS, Molecular basis for the role of glucokinase regulatory protein as the allosteric switch for glucokinase, *PNAS* 110(25), 10171-10176 (2013). (***Co-first author**)
6. Kim J*, **Seo MH***, Lee S, Cho K, Yang A, Woo K, Kim HS, Park HS, Simple and efficient strategy for site-specific dual labeling of proteins for single-molecule FRET analysis, *Anal. Chem.* 85(3), 1468-1474 (2013). (***Co-first author**)
5. Oh BJ, **Seo MH**, Kim HS, Insignificant role of the N-terminal cobalt-binding site of albumin in the assessment of acute coronary syndrome: discrepancy between the albumin cobalt-binding assay and N-terminal-targeted immunoassay, *Biomarkers* 17(5), 394-401 (2012).
4. **Seo MH**, Lee TS, Kim E, Cho YL, Park HS, Yoon TY, Kim HS, Efficient single-molecule fluorescence resonance energy transfer analysis by site-specific dual-labeling of protein using an unnatural amino acid, *Anal. Chem.* 83(23), 8849-8854 (2011).
3. **Seo MH**, Han J, Jin Z, Lee DW, Park HS, Kim HS, Controlled and oriented immobilization of protein by site-specific incorporation of unnatural amino acid, *Anal. Chem.* 83(8), 2841-2845 (2011).
2. Lee S, Chang Y, Shin DM, Han J, **Seo MH**, Fazelinia H, Maranas C, Kim HS, Designing the substrate specificity of d-hydantoinase using a rational approach, *Enzyme Microb. Technol.* 44, 170–175 (2009).
1. Han MK, **Seo MH**, Lee D, Kim S, Park HS, Kim HS, Optimization of critical factors affecting the performance of allergen chip for analysis of allergen-specific human IgE in serum, *Anal. Sci.* 23(5), 545-549 (2007).