# CURRICULUM VITAE

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## EDUCATION

*2024. 02. 16* Incheon National University, Department of Life Science, Ph.D.

*2020. 02. 18* Incheon National University, Department of Life Science, MS

*2018. 02. 28* Incheon National University, 분자의생명전공, BS

## CAREER

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|---|---|
| *2024.03.01~* | Post Doc. In Incheon Univ |
| *2023.10.01 ~ 2023.12.31* | Tutoring and learning support for graduate students |
| *2023.11.29 ~ 2023.12.15* | Tutoring for publication in excellent journals |
| *2023.06.01 ~ 2023.11.15* | Teaching advanced study course research classes |
| *2021.11.01 ~ 2021.12.31* | Tutoring and learning support for graduate students |
| *2021.11.15 ~ 2021.11.30* | Tutoring for publication in excellent journals |
| *2018.03.01 ~ 2019.06.30* | Teaching experiment classes at Incheon University |

## HONORS AND AWARDS

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|---|---|
| *10/2023* | **Best Poster Award, 15$^{th}$ International Symposium on Natural Sciences** |
| *10/2021* | **Best Poster Award, 13$^{th}$ International Symposium on Natural Sciences** |
| *10/2020* | **Best Poster Award, 12$^{th}$ International Symposium on Natural Sciences** |
| *09/2020* | **Best Presentation Award, KSBMB International eConference** |
| *12/2019* | **2019 인천대를 빛낸, 인천대 학생, Incheon National University, Incheon, Korea** |

**PUBLICATION (1ST AUTHOR)**

1. **Kuk MU**[*], Lee YH[*], Kim D[*], Lee KS, Park JH, Yoon JH, Lee YJ, So B, Kim MS, Kwon HW, Lee KY†, Byun Y†, **Park JT**† (Feb 20, 2025) Sauchinone ameliorates senescence through reducing mitochondrial ROS production. ([*]: co-first author, [†]: co-corresponding author) ***Antioxidants*** 14(3): 259
2. **Kuk MU**[*], Kim D[*], Lee YH, Yoon JH, Park JH, Lee YJ, So B, Kim MS, Kwon HW, Byun Y†, Park JT† (Nov 26, 2024) Synergistic ROS reduction through co-inhibition of BRAF and p38 MAPK ameliorates senescence. ([*]: co-first author, [†]: co-corresponding author) ***Antioxidants*** 13(12): 1465
3. **Kuk MU**, So MK, Park JH, Yoon JH, Lee YJ, Kim D, So B, Lee YH, Kim M, Byun Y, Kwon HW†, Park JT† (Oct 03, 2024) ROSA26 BAC-based System Enables Continuous High-yield Protein Production. (†: co-corresponding author) ***Biotechnology and Bioprocess Engineering*** 29:1025–1033
4. Lee YH*, **Kuk MU*,** Park JH*, Lee H, Lee H, So MK, Yoon JH, Lee YJ, Kim DY, So BH, Kim MS, Park J, Han T†, Park JT† (Sep 05, 2024) Rapid and accurate ecotoxicological assessment of heavy metals using Cyprinus carpio cells. (*: these authors contributed equally to this work, †: co-corresponding author) ***Life*** (2024 IF: 3.2) 14(9), 1119
5. Lee YH*, **Kuk MU***, So MK, Song ES, Lee H, Ahn SK, Kwon HW†, Park JT†, Park SC† (Apr 13, 2023) Targeting Mitochondrial Oxidative Stress as a Strategy to Treat Aging and Age-related diseases. (†: co-corresponding author, *: these authors contributed equally to this work) ***Antioxidants*** (2023 IF: 7.0) 12:934
6. **Kuk MU**, Lee H, Song ES, Lee YH, Park JY, Jeong S, Kwon HW, Byun Y[†], Park SC[†], Park JT[†] (Jan 16, 2023) Functional restoration of lysosomes and mitochondria through modulation of AKT activity ameliorates senescence. ([†]: co-corresponding author) ***Experimental Gerontology*** 173:112091
7. **Kuk MU***, Ga YJ*, Kim YJ, Park JY, Song ES, Lee H, Lee YH, Ko G, Kim JK, Yeh JY, Kwon HW[†], Byun YJ[†], Park JT[†] Metabolic reprogramming as a novel therapeutic target for Coxsackievirus B3. (Nov 03, 2022) (*: co-first author, [†]: co-corresponding author) ***Animal Cells and Systems*** 26(6) 275–28
8. **Kuk MU**, Park JY, Song ES, Lee H, Lee YH, Joo JH, Kwon HW[†], **Park JT**[†] (May 24, 2022) Bacterial artificial chromosome-based protein expression platform using the Tol2 transposon system. ([†]: co-corresponding author) ***Biotechnology and Bioprocess Engineering*** 27(3): 344-352
9. **Kuk MU**, Lee YH, Kim JW, Hwang SY, Park JY, Song ES, Kwon HW[†], Oh S[†], Park JT[†] (Dec 31, 2021) Rapid and Efficient BAC Recombineering: Gain & Loss Screening System. ([†]: co-corresponding author) ***Biotechnology and Bioprocess Engineering*** 26(6): 1023-1033
10. **Kuk MU**, Lee YH, Kim JW, Hwang SY, Park JT[†]**,** Park SC[†] (Feb 17, 2021) Potential Treatment of Lysosomal Storage Disease Through Modulation of the Mitochondrial–Lysosomal Axis. **(**[†]: co-corresponding author**)** ***Cells*** 10: 420
11. Kim JW*, **Kuk MU*,** Choi HE, Park SC[†], Park JT[†] (Oct 15, 2019) Mitochondrial metabolic reprogramming via BRAF inhibition ameliorates senescence. **(***: co-first author, [†]: co-corresponding author**)** ***Exp Gerontol***. 126: 110691 (2020 Journal Impact factor: 3.75)

12. **Kuk MU*,** Kim JW*, Lee YS, Cho KA, Park JT†**,** Park SC† (Oct 15, 2019) Alleviation of senescence via ATM inhibition in accelerated aging models. **(***: co-first author, †: co-corresponding author**)** ***Mol. Cells*** 42:210-217. (2019/2020 Journal Impact factor: 4.081)

**PUBLICATION (CO-AUTHOR)**

1. Lee YH*, Lim H*, Kim G, Jang G, **Kuk MU**, Park JH, Yoon JH, Lee YJ, Kim D, So B, Kim M, Kwon HW, Byun Y†, Park JT† (Apr 16, 2025) Elucidating the role and mechanism of alpha-enolase in senescent amelioration via metabolic reprogramming. (*: co-first author, †: co-corresponding author) **Cell proliferation** 58(10): e70049
2. Lee YH†, So BH†, Lee KS, **Kuk MU**, Park JH, Yoon JH, Lee YJ, Kim DY, Kim MS, Kwon HW, Lee KY*, Byun Y*, Park JT* (Sep 04, 2024) Identification of cellular anti-senescence mechanism: regulatory of RAC2 and LINC00294 mediated by isoschaftoside. (†: these authors contributed equally to this work, *: co-corresponding author) ***Molecules*** (2024 IF: 4.2) 29(17), 4182
3. Lee YH, **Kuk MU**, So MK, Park HJ, Song ES, Park J, Yoon JH, Kwon HW, Choi J, Park JT† (Nov 28, 2023) Discovery of anticancer activity through chemical screening of Polyporus ulleungus. (†: co-corresponding author) ***Journal of Cancer*** (2023 IF: 4.2) 15(2):309-316
4. Song ES, Lee YH, So MK, **Kuk MU**, Park J, Yoon JH, Lee YJ, Kim D, So B, Byun Y, Kwon HW†, Park JT† (Mar 05, 2024) Establishment of a new promoter trapping vector using 2A peptide. (†: co-corresponding author) ***Biotechnology and Bioprocess Engineering*** 29:1025–1033
5. Lee YH, **Kuk MU**, So MK, Park HJ, Song ES, Park J, Yoon JH, Kwon HW†, Choi J†, Park JT† (Nov 14, 2023) *Polyporus ulleungus* mycelia cultured in MEB medium produce metabolites with anticancer property. (†: co-corresponding author) ***Journal of Cancer*** 15(2):309-316
6. Song ES, So MK, Park HJ, Lee H, Lee YH, **Kuk MU**, Park J, Kwon HW, Choi J†, Park JT† (Jul 09, 2023) Chemical screening identifies the anticancer properties of *Polyporous tuberaster*. (†: co-corresponding author) ***Journal of Cancer*** 14(11): 2075-2084
7. Lee YH*, **Kuk MU***, So MK, Song ES, Lee H, Ahn S, Kwon HW†, Park JT†, Park SC† (Apr 15, 2023) Targeting Mitochondrial Oxidative Stress as a Strategy to Treat Aging and Age-Related Diseases. (*: co-first author, †: co-corresponding author) ***Antioxidants*** 12:934
8. Lee H, Song ES, Lee YH, Park JY, **Kuk MU**, Kwon HW, Roh H†, Park JT† (Feb 07, 2023) A novel hybrid promoter capable of continuously producing proteins in high yield. (†: co-corresponding author) ***Biochemical and Biophysical Research Communications*** 650: 103-108
9. Park JY, Lee H, Song ES, Lee YH, **Kuk MU**, Ko G, Byun YJ†, Kwon HW†, Park JT† (Dec 31, 2022) Improvement of Tol2 transposon system by modification of Tol2 transposase. (†: co-corresponding author) ***Biotechnology and Bioprocess Engineering*** 27(6): 987-994
10. Park JY, Lee H, Song ES, Lee YH, **Kuk MU**, Ko G, Kwon HW†, Byun YJ†, Park JT† (Dec 01, 2022) Restoration of lysosomal and mitochondrial function through p38 MAPK inhibition ameliorates senescence. (†: co-corresponding author) ***Rejuvenation Research*** 25(6):291-299

11. Lee YH, Park JY, Song ES, Lee H, **Kuk MU**, Joo JH, Roh H[†], **Park JT**[†] (Jun 25, 2022) Improvement of Sleeping Beauty transposon system enabling efficient and stable protein production. ([†]: co-corresponding author) ***Biotechnology and Bioprocess Engineering*.** 27(3): 353-360
12. Lee YH, Choi D, Jang G, Park JY, Song ES, Lee H, **Kuk MU**, Joo JH, Ahn SK, Byun Y[†], **Park JT**[†] (Jan 30, 2022) Targeting regulation of ATP synthase 5 alpha/beta dimerization alleviates senescence. ([†]: co-corresponding author) ***Aging*** 14(2):678-707
13. Lee YH, Park JY, Lee H, Song ES, **Kuk MU**, Joo JH, Oh S, Kwon HW[†], Park JT[†], Park SC[†] (Nov 03, 2021) Targeting mitochondrial metabolism as a strategy to treat senescence ([†]: co-corresponding author) ***Cells*** 10(11): 3003
14. Kim JW, Lee YH, **Kuk MU**, Hwang SY, Kwon HW, Park JT (Oct 31, 2021) Cre/Lox-based RMCE for site-specific integration in CHO cells. ***Biotechnology and Bioprocess Engineering*** 26(5): 795-803
15. Hwang SY, Lee YH, **Kuk MU**, Kim JW, Oh S, Park JT (Oct 31, 2021) Improvement of Tol2 transposon system enabling efficient protein production in CHO cells. ***Biotechnology and Bioprocess Engineering*** 26(5): 767-775
16. Hwang SY, **Kuk MU**, Kim JW, Lee YH, Lee YS, Choy HE, Park SC, Park JT (Nov 01, 2020) ATM mediated-p53 signaling pathway forms a novel axis for senescence control. ***Mitochondrion*** 55:54-63 (2019/2020 Journal Impact factor: 3.992)

**PATENTS (REGISTRATION)**

1. **국명욱**, 박지윤, 권형욱, 변영주, 박준태 (Dec 03, 2025), 콕사키바이러스 B3 감염 치료 또는 예방용 조성물, 10-2897391 (등록)
2. **국명욱**, 박준태 (Apr 04, 2022), 박테리아 인공 염색체 재조합 스크리닝 방법, 10-2384173 (등록)
3. **국명욱**, 박준태 (Jan 10, 2022), Tol2 트랜스포존 시스템을 포함하는 인공 염색체 및 이를 이용한 단백질 생산 방법, 10-2350981 (등록)

**PATENTS (Filling) (PCT)**

1. 윤지희, **국명욱**, 권형욱, 변영주, 김예향, 차소윤, 김하연, 남연경, 정은영, 김소연, 박진성, 신송석, 박준태 (Feb 19, 2025), 세포 노화 및 대사 기능 회복 효능을 갖는 호장근 유래 역노화 조성물, PCT/KR2025/099451 (출원)
2. **국명욱**, 박준태 (Feb 19, 2021), Tol2 트랜스포존 시스템을 포함하는 인공 염색체 및 이를 이용한 단백질 생산 방법, PCT/KR2021/002138 (출원)
3. **국명욱**, 박준태 (Aug 27, 2020), 박테리아 인공 염색체 재조합 스크리닝 방법, PCT/KR2020/011464 (출원)

**PATENTS (Filling) (KOR)**

1. **국명욱**, 김두열, 이윤행, 변영주, 박준태 (Feb 27, 2025), BRAF 억제제 및 p38 MAPK 억제제를 유효성분으로 포함하는 항노화 조성물, 10-2025-0025992 (출원)
2. 윤지희, **국명욱**, 권형욱, 변영주, 김예향, 차소윤, 김하연, 남연경, 정은영, 김소연, 박진성, 신송석, 박준태 (Jan 31, 2025), 세포 노화 및 대사 기능 회복 효능을 갖는 호장근 유래 역노화 조성물, 10-2025-0012464 (출원)
3. 윤지희, **국명욱**, 권형욱, 변영주, 김예향, 차소윤, 김하연, 남연경, 정은영, 김소연, 박진성, 신송석, 박준태 (Jul 30, 2024), 세포 노화 및 대사 기능 회복 효능을 갖는 호장근 유래 역노화 조성물, 10-2024-0100730 (출원)
4. **국명욱**, 김두열, 권형욱, 변영주, 이기용, 박준태 (Apr 30, 2024), 사우치논을 유효성분으로 포함하는 항노화 조성물, 10-2024-0058049 (출원)
5. **국명욱**, 변영주, 권형욱, 박준태 (Feb 16, 2023), 결손된 iMAR 유전자를 포함하는 목적 단백질 발현 카세트 및 벡터 및 이를 포함하는 형질전환 세포, 10-2024-0022827 (출원)

6. **국명욱**, 권형욱, 박준태 (Mar 21, 2023), ROSA26 박테리아 인공염색체 내인성 프로모터, 10-2023-0036503 (출원)
7. **국명욱**, 이윤행, 권형욱, 변영주, 박준태 (Jul 29, 2022), AKT 저해제를 포함하는 미토파지 활성화 방법, 10-2022-0095033 (출원)

**POSTER PRESENTATION**

1. **Kuk MU**, **Park JT** (2024) EXPLORING REJUVENATION EFFECTS THROUGH THE APPLICATION OF SAUCHINONE AS AN NF-KB INHIBITOR, 16th International Symposium on Natural Sciences, October 10th ~ October 11th, 2024, Research Institute of Basic Sciences, Incheon National University
2. **Kuk MU**, **Park JT** (2024) Mitochondrial dysfunction caused by the 3C protease of coxsackievirus B3 in HeLa cell, 2024 한국방역학회 춘계학술대회 May 30, 2024, 한국방역학회
3. **Kuk MU**, **Park JT** (2024) THE ROSA26 BAC ENDOGENOUS PROMOTER ENHANCE THE SYNTHESIS OF RECOMBINANT PROTEINS, International Conference 2024, May 28 ~ May 31, 2024, 생화학분자생물학회
4. **Kuk MU**, **Park JT** (2024) MINIMIZATION OF HUMAN BETA-INTERFERON MARS IN RECOMBINANT PROTEIN PRODUCTION SYSTEMS, International Conference 2024, May 28 ~ May 31, 2024, 생화학분자생물학회
5. **Kuk MU**, **Park JT** (2024) EXPLORING REJUVENATION EFFECTS THROUGH THE APPLICATION OF SAUCHINONE AS AN NF-KB INHIBITOR, International Conference 2024, May 28 ~ May 31, 2024, 생화학분자생물학회
6. **Kuk MU**, Park JT (2023) The *ROSA26* BAC endogenous promoter enhances the synthesis of recombinant proteins, 15th International Symposium on Natural Sciences, October 30th~ 31th, 2023, Research Institute of Basic Sciences, INU
7. **Kuk MU**, Park JT (2023) Minimization of human β-interferon MARs in recombinant protein production systems, 15th International Symposium on Natural Sciences, October 30th~ 31th, 2023, Research Institute of Basic Sciences, INU
8. **Kuk MU**, Park JT (2023) Mitochondrial dysfunction caused by the 3C protease of coxsackievirus B3 in HeLa cell, 15th International Symposium on Natural Sciences, October 30th~ 31th, 2023, Research Institute of Basic Sciences, INU
9. **Kuk MU**, Park JT (2023) The ROSA26 BAC Endogenous Promoter: A Novel Strategy for Optimizing Recombinant Protein Production Efficiency, International Conference 2023, May 10 ~ May 13, 2023, KSBMB
10. **Kuk MU**, Park JT (2023) Harnessing iMARs for Enhanced Recombinant Protein Expression in Biopharmaceutical and Gene Therapy Applications, International Conference 2023, May 10 ~ May 13, 2023, KSBMB
11. **Kuk MU**, Park JT (2023) Exploiting CVB3 3C Protease Mutants for Therapeutic Intervention of Coxsackievirus B3 Infection, International Conference 2023, May 10 ~ May 13, 2023, KSBMB
12. **Kuk MU**, Park JT (2021) BAC based antibody expression platform using Tol2 transposon in CHO cells, 13th International Symposium on Natural Sciences, October 6th, 2021, Research Institute of Basic Sciences, INU
13. **Kuk MU**, Park JT (2021) Metabolic reprogramming from oxidative phosphorylation to glycolysis is induced by Coxsackievirus B3 in Hela cells, 13th International Symposium on Natural Sciences, October 6th, 2021, Research Institute of Basic Sciences, INU
14. **Kuk MU**, Park JT (2021) Mitochondrial metabolic reprogramming via AKT inhibition ameliorates senescence, 13th International Symposium on Natural Sciences, October 6th, 2021, Research Institute of Basic Sciences, INU
15. **Kuk MU**, Park JT (2021) Superior secretion gene trapping in Chinese hamster ovary cell line, 13th International Symposium on Natural Sciences, October 6th, 2021, Research Institute of Basic Sciences, INU

16. Hwang SY, **Kuk MU**, Kim JW, Park JT (2020) ATM mediated-p53 signaling pathway forms a novel axis for senescence control, 12th International Symposium on Natural Sciences, October 9th 2020, Research Institute of Basic Sciences, Incheon National University
17. Hwang SY, **Kuk MU**, Kim JW, Park JT (2020) Improved Tol2 transposon-based system for efficient protein production, 12th International Symposium on Natural Sciences, October 9th 2020, Research Institute of Basic Sciences, Incheon National University
18. **Kuk MU**, Park JT (2020) BAC based antibody expression platform using Tol2 transposon in CHO cells, 12th International Symposium on Natural Sciences, October 9th 2020, Research Institute of Basic Sciences, Incheon National University
19. **Kuk MU**, **Park JT** (2020) Metabolic reprogramming from oxidative phosphorylation to glycolysis is induced by Coxsackievirus B3 in Hela cells, 12th International Symposium on Natural Sciences, October 9th 2020, Research Institute of Basic Sciences, Incheon National University
20. **Kuk MU,** Park JT (2020) BAC based antibody expression platform using Tol2 transposon in CHO cells, International Conference 2020, September 21th, 2020 ~ September 23th, 2020, KSBMB
21. **Kuk MU,** Park JT (2020) reprogramming from oxidative phosphorylation to glycolysis is induced by Coxsackievirus B3 in Hela cells, International Conference 2020, Metabolic September 21th, 2020 ~ September 23th, 2020, KSBMB
22. **Kuk MU**, Park JT (2019) Antibody expression platform using Tol2 transposon in CHO cells, 11th International Symposium on Natural Sciences, October 09th, 2019 ~ October 11th, 2019, Research Institute of Basic Sciences, INU
23. **Kuk MU**, Park JT (2019) BAC Recombineering Gain and Loss method enable it to finish within one week, 11th International Symposium on Natural Sciences, October 09th, 2019 ~ October 11th, 2019, Research Institute of Basic Sciences, INU
24. **Kuk MU,** Park JT (2019) Antibody expression platform using Tol2 transposon in CHO cells, International Conference 2019, June 02th, 2019 ~ June 05th, 2019, KSBMB
25. **Kuk MU,** Park JT (2019) BAC Recombineering Gain and Loss method enable it to finish within one week, International Conference 2019, June 02th, 2019 ~ June 05th, 2019, KSBMB
26. **Kuk MU**, Park JT (2018) A crucial role of B-Raf for alleviation of senescence-associated phenotype, 10th International Symposium on Natural Sciences, Research Institute of Basic Sciences, October 11th, 2018, INU