Ryo Kurosawa, Ph.D. candidate

Curriculum Vitae (CV)

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https://github.com/shiro-kur

Education

Kyoto University Graduate School of Medicine — **Kyoto, Japan**
M.S. and Ph.D. in Medical Science — *Apr. 2020-present*
Department of Anatomy and Developmental Biology

Kyoto University — **Kyoto, Japan**
B.S. in Agriculture — *Apr. 2016-Mar. 2020*
Department of Bioresource Science

Research Experience

Kyoto University Graduate School & Kyoto University Hospital — **Kyoto, Japan**
Graduate Student, Department of Anatomy and Developmental Biology — *Apr. 2020-present*
Advisor: Dr. Masatoshi Hagiwara, Dr. Kei Iida, Dr. Tomonari Awaya, Dr. Masahiko Ajiro, and Dr. Takeshi Yoshida
Research themes:
- ○ Artificial intelligence construction for target exon prediction by splicing modulators.
- ○ Machine learning model construction to predict pathogenicity of deep-intronic genetic variants
- ○ Genetic diagnosis for patient previously undiagnosed by exome-sequencing.
- ○ Optimization and patterning of efficacy on spice-switching antisense oligonucleotides.

M.S. thesis: In silico strategy for identification of deep-intronic variants causing aberrant splicing

Kyoto University — **Kyoto, Japan**
Undergraduate Student, Department of Bioresource Science — *Apr. 2019-Mar. 2020*
Advisor: Dr. Yukio Taniguchi
Bachelor thesis: Determination of MHC class II genomic structure of an endangered bird of Oriental White Stork using phase library.

Kyoto University — **Kyoto, Japan**
Undergraduate Student, Department of Bioresource Science — *Apr. 2018-Mar. 2019*
Advisor: Dr. Shigeki Sawayama
Research themes:
- ○ Establishment of genetically engineering method for Chlorella vulgaris, a microalgae

Fellowships

Interdisciplinary Joint Research — **Kyoto, Japan**
Kyoto University the Graduate Program for Medical Innovation — *2023-2025*

Grant-in-Aid for JSPS Fellows — **Tokyo, Japan**
Japan Society for the Promotion of Science — *2022-2025*

Scholarships

Division of Graduate Studies Donor Designated Scholarship — **Tokyo, Japan**
Oriental Shiraishi Corporation — *2024-2025*

Awards

Poster Presentation Prize **Edinburgh, UK**
the 29th Annual Meeting of the RNA SOCIETY *June. 2024*

Kyoto University Faculty of Medicine Young Investigator Award **Kyoto, Japan**
Kyoto University *Sep. 2024*

Publication

(† = co-corresponding)

1. Ajiro M, Awaya T, Young YJ, Iida K, Denawa M, Tanaka N, **Kurosawa R**, Matsushima S, Shibata S, Sakamoto T, Studer R, Krainer AR, and Hagiwara M. Therapeutic manipulation of IKBKAP mis-splicing with a small molecule to cure familial dysautonomia. ***Nature Communications*** 2021
2. Iida K, Ajiro M, Muramoto U, Takenaga T, Denawa M, **Kurosawa R**, Noda T, and Hagiwara M. Switching of OAS1 splicing isoforms mitigates SARS-CoV-2 infection. ***bioRxiv*** 2021
3. Ohara H, Hosokawa M, Awaya T, Hagiwara A, **Kurosawa R**, Sako Y, Ogawa M, Ogasawara M, Noguchi S, Goto Y, Takahashi R, Nishino I, Hagiwara M. Branchpoints as potential targets of exon-skipping therapies for genetic disorders. ***Mol. Ther. Nucleic Acids*** 2023
4. **Kurosawa R** †, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M †. PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing. ***BMC Genomics*** 2023
5 Yamada M, Maeta K, Suzuki H, **Kurosawa R**, Takenouchi T, Awaya T, Ajiro M, Takeuchi A, Nishio H, Hagiwara M, Miya F, Matsuo M & Kosaki K. Successful skipping of abnormal pseudoexon by antisense oligonucleotides in vitro for a patient with beta-propeller protein-associated neurodegeneration. ***Sci. Rep.*** 2024

Software

PDIVAS (Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Spicing)

・GitHub link (source-code)
https://github.com/shiro-kur/PDIVAS
・PyPI link (Administration platform)
https://pypi.org/project/pdivas/
・ANACONDA link (Administration platform)
https://anaconda.org/bioconda/pdivas
・Google Cloud Platform link (Database server for pre-calculated files of PDIVAS scores)
https://console.cloud.google.com/storage/browser/pdivas;tab=objects?project=vibrant-crawler-377901&prefix=&forceOnObjectsSortingFiltering=false&hl=ja

Presentations

International Conference……

6. **Kurosawa R**, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing", ***RNA Society Annual Meeting 2023, Poster Session***, 2023
7. **Kurosawa R**, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing", ***The 68th Annual Meeting of the Japan Society of Human Genetics,14th Asia Pacific Conference on Human Genetis, and 22nd Annual meeting of East Asian Union of Human Genetics Societies, Oral Session***, 2023
8. **Kurosawa R**, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing", ***The 75th Annual Meeting of the American Society of Human Genetics, Poster Session***, 2023

Domestic Conference (in Japan)……

9. **Kurosawa R**, Taniguchi Y, Yokoi N, Naito K, Iwaisaki H, "Analysis of the Oriental White Stork MHC genomic structure provides new insight into avian MHC evolution",***The 42th Annual Meeting of the Molecular Biology Society of Japan, Poster Session***, 2019
10. **Kurosawa R**, Ajiro M, Hagiwara M, "Investigation of Pathogenic Pseudo Exons and their Amendment by Small Molecules", ***The 43th Annual Meeting of the Molecular Biology Society of Japan, Poster Session***, 2020
11. **Kurosawa R**, Ajiro M, Hagiwara M, "Genome-wide Screening for Pseudo-exonic Variants and their Modulation by CLK Inhibitors", ***2nd Pharmaceutical Research Exchange Salon, Poster Session***, 2021
12. **Kurosawa R**, Ajiro M, Hagiwara M, "Comprehensive analysis with SpliceAI for deep-intronic variants disrupting normal splicing", ***The 22th RNA Society of Japan, Poster Session***, 2021
13. **Kurosawa R**, Ajiro M, Hagiwara M, "Screening methods for the detection of pathogenic deep intron mutations.", ***The 7th Japan Muscle Society, Poster Session***, 2021
14. **Kurosawa R**, Ajiro M, Hagiwara M, "Comprehensive analysis of whole-genome sequence for deep-intronic splicing-associated variant", ***The 44th Annual Meeting of the Molecular Biology Society of Japan, Oral & PosterSession***, 2021
15. **Kurosawa R**, Ajiro M, Iida K, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "In silico strategy for the identification of deep-intronic variants causing aberrant splicing", ***The 67th Annual Meeting of the Japan Society of Human Genetics, Poster Session*** ,2022
16. **Kurosawa R**, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing", ***3rd Pharmaceutical Research Exchange Salon, Poster Session***, 2023
17. **Kurosawa R**, Iida K, Ajiro M, Awaya T, Yamada M, Kosaki K, and Hagiwara M, "PDIVAS: Pathogenicity predictor for Deep-Intronic Variants causing Aberrant Splicing", ***WISE Program Doctoral Program for World-leading Innovative & Smart Education***, 2023

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