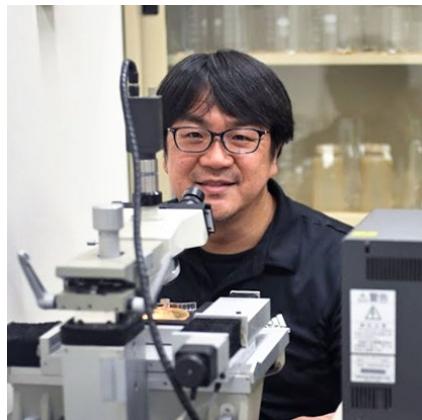


## Molecular Cell Biology

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### Other Faculty Members

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### Major Scientific Interests of the Group

- 1) Post-transcriptional regulation of gene expression by RNA-binding proteins.
- 2) Signaling pathway for the regulation of the endoplasmic reticulum stress response.
- 3) Developmental regulation for membrane traffic in meiosis.

### Projects for Regular Students in Doctoral or Master's Programs

- 1) Deciphering the roles of Ccr4-Not complex and RNA-binding protein Puf5 in cell cycle progression and stress response.
- 2) Identification of novel regulatory mechanism driven by RNA binding protein during ER stress response.
- 3) Spatiotemporal regulation of localized translation during gametogenesis in budding yeast *Saccharomyces cerevisiae*.
- 4) Regulation of *CLB* expression by the cytoplasmic deadenylase Ccr4 through their coding and 3' UTR regions.

### Study Programs for Short Stay Students (one week – one semester)

Yeast genetics and molecular biology, Gene knockout, Regulation of gene expression, GFP imaging, Yeast two-hybrid

### Selected Publications

- 1) Taguchi S, Suda Y, Irie K, Ozaki H. Automation of yeast spot assays using an affordable liquid handling robot. *SLAS Technol.* 2023 Apr;28(2):55-62.
- 2) Sato M, Irie K, Suda Y, Mizuno T, Irie K. The RNA-binding protein Puf5 and the HMGB protein Ixr1 contribute to cell cycle progression through the regulation of cell cycle-specific expression of *CLB1* in *Saccharomyces cerevisiae*. *PLoS Genet.* 2022 Jul 29;18(7):e1010340.
- 3) Revilleza JEC, Sato M, Irie K, Suda Y, Mizuno T, Irie K. Regulation of *CLB6* expression by the cytoplasmic deadenylase Ccr4 through its coding and 3' UTR regions. *PLoS One.* 2022 May 6;17(5):e0268283.
- 4) Fujii S, Duy DL, Valderrama AL, Takeuchi R, Matsuura E, Ito A, Irie K, Suda Y, Mizuno T, Irie K. Pan2-Pan3 complex, together with Ccr4-Not complex, has a role in the cell growth on non-fermentable carbon sources. *Biochem Biophys Res Commun.* 2021 Sep 17;570:125-130.
- 5) Mizuno T, Irie K. Msn2/4 transcription factors positively regulate expression of Atg39 ER-phagy receptor. *Sci Rep.* 2021 Jun 7;11(1):11919.
- 6) Tuong Vi DT, Fujii S, Valderrama AL, Ito A, Matsuura E, Nishihata A, Irie K, Suda Y, Mizuno T, Irie K. Pbp1, the yeast ortholog of human Ataxin-2, functions in the cell growth on non-fermentable carbon sources. *PLoS One.* 2021 May 13;16(5):e0251456.
- 7) Mizuno T, Muroi K, Irie K. Snf1 AMPK positively regulates ER-phagy via expression control of Atg39 autophagy receptor in yeast ER stress response. *PLoS Genet.* 2020 Sep 28;16(9):e1009053.
- 8) Lien PTK, Viet NTM, Mizuno T, Suda Y, Irie K. Pop2 phosphorylation at S39 contributes to the glucose repression of stress response genes, HSP12 and HSP26. *PLoS One.* 2019 Apr 11;14(4):e0215064.
- 9) Viet NTM, Duy DL, Saito K, Irie K, Suda Y, Mizuno T, Irie K. Regulation of *LRG1* expression by RNA-binding protein Puf5 in the budding yeast cell wall integrity pathway. *Genes Cells.* 2018 Dec;23(12):988-997.
- 10) Mizuno T, Nakamura M, Irie K. Induction of Ptp2 and Cmp2 protein phosphatases is crucial for the adaptive response to ER stress in *Saccharomyces cerevisiae*. *Sci Rep.* 2018 Aug 30;8(1):13078.
- 11) Suda Y, Tachikawa H, Inoue I, Kurita T, Saito C, Kurokawa K, Nakano A, Irie K. Activation of Rab GTPase Sec4 by its GEF Sec2 is required for prospore membrane formation during sporulation in yeast *Saccharomyces cerevisiae*. *FEMS Yeast Res.* 2018 Feb 1;18(1).