

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF CELL AND DEVELOPMENTAL BIOLOGY

Ryoma Ohi, Ph.D., associate professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School, is recommended for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School.

Academic Degrees:

Ph.D.	1998	Vanderbilt University
B.S.	1993	Vanderbilt University

Professional Record:

2017 - present	Associate Professor of Cell and Developmental Biology, with tenure, University of Michigan
2014 - 2017	Associate Professor of Cell and Developmental Biology, with tenure, Vanderbilt University
2007 - 2014	Assistant Professor of Cell and Developmental Biology, Vanderbilt University

Summary of Evaluation:

Teaching: Dr. Ohi has been enthusiastically and effectively engaged in teaching in the classroom, particularly in the presentation of lectures and in classroom discussions in a large number and breadth of graduate-level courses. He was recruited to teach in CDB 530, the flagship entry-level graduate course in cell biology for the Department of Cell and Developmental Biology. This course has been well-received by students. Dr. Ohi is very involved in teaching in his laboratory, providing hands-on training to post-doctoral fellows, graduate students, and undergraduate students. He has mentored three post-doctoral fellows, seven graduate students and one research investigator. His former trainees have gone on to successful careers in academia, including at Columbia University, University of Michigan, University of South Florida, and industry. Dr. Ohi is also widely sought out as an advisor on dissertation committees, having served or currently serving on 36 graduate dissertation committees.

Research: Dr. Ohi's research is focused on microtubules, which are cytoskeletal filaments with essential roles in a wide range of cellular processes including cell division, cell migration, and intracellular trafficking. During cell division, microtubules self-organize to form the mitotic spindle, a force producing apparatus that segregates a duplicated set of chromosomes between two daughter cells. A major goal of Dr. Ohi's group has been to discover broadly relevant mechanisms that govern the assembly and function of the mitotic spindle. Over the past 14 years, his laboratory has made many important contributions to this highly competitive field, including mechanisms that govern assembly of the mitotic spindle, drive chromosome oscillations, and regulate cytokinesis. Dr. Ohi's laboratory has also been a leader in the discovery and understanding of cancer therapeutics, having identified, and characterized mechanisms of cellular resistance to

kinesin-5 inhibitors and then established a high- throughput screening pipeline to identify new small molecule inhibitors.

Dr. Ohi's laboratory has set out in two new directions. First, studies of kinesin family binding protein (KIFBP), mutated in Goldberg-Shprintzen megacolon syndrome, and how it regulates the activity of two mitotic kinesins, and second, the reading, writing, and erasing of the "Tubulin Code" that defines microtubule function. These and other studies from Dr. Ohi's laboratory demonstrate that he is a highly creative thinker and is effective at determining correct paths to answer critical questions. His research has been well-funded from the NIH-NIGMS, as well as private foundations such as the Leukemia and Lymphoma Society and the American Heart Association. He has published 59 peer-reviewed articles in high-impact journals, including *Nature Communications*, *Current Biology* and *Journal of Cell Biology*.

Five Recent and Significant Publications:

Hotta, T, Haynes, S, Blasius, TL, Gebbie, M, Eberhardt, EL, Sept, D, Cianfrocco, M, Verhey, K, Nesvizhskii, A, and Ohi, R: Parthenolide destabilizes microtubules by covalently modifying tubulin. *Curr. Biol.*, 31:900-907, 2020. PMID: 333482110, PMCID: PMC7931505

Malaby, HL H, Dumas, ME, Ohi, R, and Stumpff, J: Kinesin-Binding Protein (KBP) buffers the activity of KIF18A and KIF15 in mitosis to ensure accurate chromosome segregation. *Journal of Cell Biol.*, 218:1218-1234, 2019. PMID: 31446846

Dumas, ME, Chen, GY, Kendrick, N, Xu, G, Larsen, SA, Jana, S, Waterson, AG, Bauer, JA, Hancock, W, Sulikowski, GA, and Ohi, R: Dual inhibition of Kif15 by oxindole and quinazolidinedione chemical probes. *Bioorg. Med. Chem. Letters*, 29:148-154, 2019. PMID: 314681659

Norris, SR, Jung, S, Singh, P, Strothman, CE, Erwin, AL, Ohi, MD, Zanic, M and Ohi, R: Microtubule minus-end aster organization is driven by processive HSET-tubulin clusters. *Nature Communications*, 9:2659, 2018. PMID: 3037785

Landino, J, Norris, SR, Li, M, Ballister, ER, Lampson, MA, and Ohi, R: Two mechanisms coordinate the recruitment of the Chromosomal Passenger Complex to the plane of cell division. *Mol. Biol. Cell*, 28:3634-3646, 2017. PMID: 285706991

Service: Institutionally, Dr. Ohi has served as the co-chair of the Graduate Program in Cell and Developmental Biology from 2019-2021, and as the associate chair for Education and Training. In the associate chair role, his chief focus is to oversee the training of both graduate students and post-doctoral fellows in cell and developmental biology. He is highly sought-after for service at the national and international levels. Dr. Ohi was a reviewing member of F1000 and a co-editor for a *Methods in Molecular Biology* volume focused on the mitotic spindle. He performs peer-review of manuscripts for numerous journals within his field as well as general biology journals. Dr. Ohi served as a regular member of the American Heart Association study section, Cell Structure and Survival 3, and has served as an ad hoc reviewer for the National Institutes of Health, National Science Foundation, Wellcome Trust, Medical Research Council, Association for International Cancer Research, U.S.-Israel Binational Science Foundation, and the Croatian Science Foundation.

Currently, Dr. Ohi serves as a standing member of the Nuclear and Cytoplasmic Structure and Dynamics (NCSD) study section for the NIH. He is a long-standing and active member of the American Society of Cell Biology and is currently the co-chair of the American Society for Cell Biology Public Information Committee and has served on their Nominating Council.

External Reviewers:

Reviewer A: “Dr Ohi has developed as an incisive thinker, outstanding experimentalist, and an exceptional mentor. Everything we look for in a full professor. Over the course of the ~ 30 years, the single most striking quality I have seen in Dr Ohi is how he fearlessly takes on and completes extremely challenging projects. At every stage of his career, he had the command and skill of someone more experienced...I am confident he would have been promoted to full professorship in my university.”

Reviewer B: “His experience in both obtaining and renewing federal grants is a strong indicator of future success which I would anticipate remaining at or near this level of funding...Based on my academic and administrative (I previously served as chairperson of our Appointments, Promotions and Titles committee) experience, I believe that Dr. Ohi would fulfill or exceed all our criteria and that he would be recommended for promotion to Professor with tenure at our institution.”

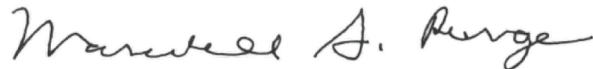
Reviewer C: “Dr. Ohi’s work is focused on the microtubule cytoskeleton and its role in cell division. This is an important area of investigation, with significance to the genomic instability of tumor cells and the targeting of the cell division machinery in cancer chemotherapy. Dr. Ohi’s work has had significant impact, particularly his work on different classes of kinesin family proteins involved in cell division. Dr. Ohi is also known for defining mechanisms of resistance to cell division inhibitors and for pursuing chemical biology approaches targeting cell division. Overall, Dr. Ohi has had a major impact in the field.”

Reviewer D: “Dr. Ohi runs a successful productive lab at the forefront of cell biology...I have served for many years as a member of the Promotions and Tenure Committee at [my institution], and I know that a P.I. with such academic credentials and stable record of extramural funding would certainly be promoted to Full Professor here at my institution. I recommend Dr. Ryoma Ohi for promotion without any reservations.”

Reviewer E: “Dr. Ohi’s presentations are remarkably clear and informative. In the audience his questions, which are numerous, are always interesting and insightful. In addition, Dr. Ohi has contributed substantially to the research effort through his significant reviewing duties. His skill in that area has been recognized by his appointments as a standing member of review panels from the American Heart Association and the NIH. Thus in terms of his total scholarly activities, I would rank Dr. Ohi among the leaders in the field of microtubule biology and cell division.”

Summary of Recommendation:

Dr. Ohi has accomplished a record of truly exceptional scholarship in the field of microtubules. The high quality of his research and his expertise are broadly recognized by colleagues institutionally, nationally and internationally. He is an excellent educator with strong service. I am pleased to recommend Ryoma Ohi, Ph.D. for promotion to professor of cell and developmental biology, with tenure, Department of Cell and Developmental Biology, Medical School.



Marschall S. Runge, M.D, Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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