TENURE RECOMMENDATION
UNIVERSITY OF MICHIGAN MEDICAL SCHOOL
DEPARTMENT OF MOLECULAR AND INTEGRATIVE PHYSIOLOGY

Richard M. Mortensen, M.D., Ph.D., is recommended for the granting of tenure to be held with his title of Associate Professor of Molecular and Integrative Physiology, Department of Molecular and Integrative Physiology, Medical School. [He also holds appointments as Associate Professor of Internal Medicine, without tenure, Department of Internal Medicine and Associate Professor of Pharmacology, without tenure, Department of Pharmacology, Medical School.]

Academic Degrees:

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| M.D. | 1984 | Cornell University Medical College |
| Ph.D. | 1983 | The Rockefeller University |
| B.S. | 1976 | Pennsylvania State University |

Professional Record:

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| 2002-Present | Associate Professor of Pharmacology, University of Michigan |
| 2000-Present | Associate Professor of Molecular and Integrative Physiology<br>Associate Professor of Internal Medicine, University of Michigan |
| 1992-2000 | Assistant Professor of Medicine, Harvard Medical School |
| 1990-1992 | Instructor in Medicine, Brigham and Women's Hospital, Boston |

Summary of Evaluation:

Teaching: Dr. Mortensen serves as block coordinator and presents 12-13 hours of material annually in the first-year Endocrine Block. This is a major teaching responsibility for which he has received excellent reviews from both students and the year coordinator, Dr. Robert Paine. His student evaluations from the last three years have fallen in the 3.5-3.8 range on a scale of 1 to 5 (best). Dr. Mortensen also has presented other small group conferences including renal physiology to first-year students and, last year, presented two hours of material on nutritional assessment for the over weight/obese patient to second-year students. With regard to graduate student teaching, he has presented material in Organogenesis of Complex systems (CMB 683) where he has covered in various years organogenesis of the heart, organogenesis of the pancreas, and, most recently, stem cells and organogenesis. In the most recent year, 13 out of 14 students rated his teaching in this course as excellent or outstanding. He has also taught in Integrative Genomics (Physiology 555) where he presented material on transgenic mouse techniques and in Cardiovascular Pharmacology (Pharmacology 752). In the laboratory he is currently supervising three Ph.D. students, the first of whom is scheduled to graduate this year. In addition, he has served on 13 preliminary exam committees and seven thesis committees. Before coming to Michigan he supervised several junior faculty trainees.

Research: Dr. Mortensen's research deals with the pathophysiology of cardiovascular disease, obesity, and diabetes. He focuses on the role of signal transduction pathways particularly heterotrimeric G proteins and transcription factors of the PPAR family. In his work he uses both embryonic stem cells and transgenic animals. In his early work he developed a widely used

method to produce knockout cell lines by homologous recombination. He has been a pioneer in the targeted disruption of G protein subunits and the resultant effects on cardiac physiology, and has studied these mice both in his own laboratory and in collaborations throughout the country. Subsequently, he turned his attention to PPARγ and was the first to produce knockout embryonic stem cell lines. With Bruce Spiegelman's laboratory he showed that deletion of PPARγ stopped differentiation of ES cells to adipocytes. Most recently he has defined an interesting phenotype in mice with cardiac-specific deletion of PPARγ. His research has led to 43 original research publications and 11 chapters and reviews. Of these, 15 were published since arriving at Michigan. He has been successful at competing for research grants and currently holds grants from the NIH and the American Diabetes Association, is a participant in the Michigan Center for Human ES Cell Research, and a co-investigator on another faculty member's NIH grant. As evidence of his expertise and scientific stature he has been asked to serve on several NIH grant panels and has received an Established Investigator Award from the American Heart Association. In the last year he has been invited to give four presentations on his research at other institutions.

Recent and Significant Publications:

Duan SZ, Ivashchenko C, Russell MW, Milstone DS, Mortensen RM: Cardiomyocyte-specific knockout agonists and of PPAR-γ both induce cardiac hypertrophy in mice. Circ Res (Proofs published online July 28, 2005).

Nagata K, Ye C, Jain M, Milstone DS, Liao R, Mortensen RM: Galpha(i2) but not Galpha(i3) is required for muscarinic inhibition of contractility and calcium currents in adult cardiomyocytes. Circ Res 87(10):903-909, 2000.

Rosen ED, Sarraf P, Troy AE, Bradwin G, Moore K, Milstone DS, Spiegelman BM, Mortensen RM: PPAR gamma is required for the differentiation of adipose tissue in vivo and in vitro. Mol Cell 4(4):611-617, 1999.

Sowell MO, Ye C, Ricupero DA, Hansen S, Quinn SJ, Vassilev PM, Mortensen RM: Targeted inactivation of alphai2 or alphai3 disrupts activation of the cardiac muscarinic K+ channel, IK+Ach, in intact cells. Proc Natl Acad Sci USA 94(15):7921-7926, 1997.

Mortensen RM: Double knockouts. Production of mutant cell lines in cardiovascular research. Hypertension 22(4):646-651, 1993.

Service: In the Department of Molecular & Integrative Physiology Dr. Mortensen has served on the Graduate Committee, the Space Committee, and the Steering Committee for the Center for Integrative Genomics. In the Medical School he serves on the Pharmacological Sciences Training Program Biology Track Committee, the Steering Committee for Stem Cell Research, and on the MDRTC (Michigan Diabetes Research and Training Center) Scientific Advisory Council. He has also been a significant contributor to the Organogenesis Program and recently organized an interest group on metabolic cardiovascular disease.

External Review:

Reviewer A: "...Rick's niche is to develop bioengineered mice and use them to define mechanisms whereby complex signaling and metabolic pathways are controlled in the heart. He is a leader in his peer group."

Reviewer B: "He has had outstanding publications in the highest profile journals and certainly his work shows no signs of tapering off at this point."

Reviewer C: "...his research efforts have been very productive. He is applying cutting edge stem cell and molecular technologies in an impressive manner to address important questions of clinical relevance."

Reviewer D: " . . . in balance, I believe that Dr. Mortensen has made important scientific contributions and is deserving of a tenure position."

Reviewer E: "Dr. Mortensen [is] highly regarded in the fields of G protein and PPAR biology and Physiology. He was a pioneer in the targeted disruption of G protein subunits, and he has used his expertise at gene targeting and blended it with a superb ability to analyze cardiac physiology."

Reviewer F: "He published several important papers investigating G-protein signaling in cardiac myocytes and demonstrated their importance, particularly in regulating ion channels....Clearly Dr. Mortensen has made an extensive number of seminal contributions."

Summary of Recommendation:

Dr. Richard Mortensen has developed a reputation as a leading researcher in the use of mouse models to study cardiac function. He also is an important contributor to medical and graduate student teaching and to the stem cell research effort at Michigan. I am pleased to recommend that he be awarded tenure in the Department of Molecular and Integrative Physiology.

Allen S. Lichter, M.D., Dean
*Newman Family Professor*
*of Radiation Oncology*

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