

From
Digitalis
to **Ziagen**

**The University of Minnesota's
Department of
Medicinal Chemistry**

By

YUSUF J. ABUL-HAJJ

RICHARD BRODERICK

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PREFACE

The genesis of this book goes back many years.

During the long period of time when I was head of the Department of Medicinal Chemistry, the department underwent dramatic changes in many different realms, from changing personnel to evolving research trends to sometimes wrenching shifts in administration and institutional structure.

In turn, my interest in the changes that have taken place just since 1968 led me to think that there was a need for a comprehensive history of Medicinal Chemistry beginning with the founding of the University of Minnesota's College of Pharmacy in 1892 until today. In turn that same period of time—1892 to 2012—also represents the most revolutionary era in the history of the entire discipline of medicinal chemistry, witnessing the transformation of the field from an artisanal, trial-and-error approach to isolating and testing therapeutic elements in natural elements to today's high-tech, computer-assisted discovery and design of new, targeted drugs.

Of course to tell this story in depth—the history of the University of Minnesota's Department of Medicinal Chemistry—requires telling the stories of the individuals who created and shaped, and, over the decades, worked in the department.

Perhaps even more than in other disciplines, this primacy of individual contribution holds true in the Department of Medicinal Chemistry for the simple reason that it has been an institution in which individual faculty members have had a major impact in its birth and ongoing development. Those contributions began when Frederick Wulling, one of the giants of the field, agreed to move to Minnesota from his very comfortable career on the East Coast and found the state's first college of pharmacy in improvised quarters on the campus of the University of Minnesota. For several years, Wulling was not only the school's first dean but also its first—and only—faculty member in pharmacognosy and pharmaceutical chemistry. His groundbreaking work not just in building the college and department but also in the research into products like digitalis was from the first built upon by other faculty members. These faculty played a key role both in shaping and reshaping the department and in making and remaking the field of medicinal chemistry, playing leading roles in changing the focus and methodology and, ultimately, even the objectives, of medicinal chemistry research.

The achievements of individual faculty members such as Earl Fischer, Ole Gisvold, Taito Soine, Philip Portoghese, John Staba, and Robert Vince lay the groundwork for today's widely expanded roster of younger faculty whose research involves cutting-edge collaborations with other departments and centers at the University of Minnesota. In undertaking the history of an organization with such a long and varied history—one that encompasses not only revolutionary changes in the goals, methodology, and technology of research but also changes to departmental and college structures necessitated by the explosive growth of the University, especially after World War II, and the school's emergence as one of the preeminent research institutions in the world—certain challenges had to be overcome.

Not the least of these was in deciding how best to organize that long history in a way that readers would find engaging. Rather than adopting a straightforward year-by-year chronological approach, we organized the department's rich history into four sections, each corresponding to turning points in the development of medicinal chemistry at the Uni-

versity of Minnesota. Within each of those sections we attempt to tell the story thematically, examining developments in research, personnel, administration, and departmental structure during the period covered by each section. In every case, we have kept the focus on the individual faculty members whose contributions in teaching, research, service, and administration have been critical to the department's success over the past 120 years.

One final consideration went into the making of this book. While we expect that its primary audience will be members, both past and present, of the department, as well as their families, friends, and students, we also hope readers will be others who have no direct relationship to the department. The Department of Medicinal Chemistry was born in the middle of the transition of medical remedies from a folk tradition to a modern, research-driven science. Since its founding in 1892, the department has mirrored the breathtaking changes that have taken place in the analysis, discovery, and—increasingly—the design of effective drugs for the treatment of some of humanity's most deadly and crippling disorders. And it has more than mirrored those changes, in many cases, playing a critical role effecting those changes.

We chose to title this book *From Digitalis to Ziagen* not simply because it's a catchy name but also because it captures the one overriding theme that has prevailed throughout the existence of the Department of Medicinal Chemistry and will continue to prevail into the future: the never-ending quest to help cure illness and thus make the world a happier and healthier place in which to live.

Yusuf J. Abul-Hajj
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