

## EDITORIAL

# A tribute to the late Emeritus Professor Lester A Mitscher

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It is a definite honor and a privilege to be asked to pay a tribute to the late Emeritus Professor Lester A Mitscher. In contrast to my fellow editorial writers (Drs James McAlpine and Gordon Cragg), my emphasis will be more on the impact that Professor Mitscher had upon the education of medicinal chemists world-wide, and I will finish with a comment on what some of his earlier work at Lederle Laboratories led to in the tetracycline field.

In 1995, in conjunction with Sir Robin Ganellin (the co-inventor of the first billion-dollar drug, cimetidine) and Professor John Topliss, he investigated the apparent anomaly that pharmaceutical companies, world-wide, tended to hire organic chemists rather than PhD graduates in medicinal chemistry. On investigation, it turned out that medicinal chemistry was effectively a discipline within Schools of Pharmacy, not in Schools of Chemistry. Thus, newly hired organic chemists in pharmaceutical companies had to effectively 'learn on the job' in contrast to graduates from medicinal chemistry departments in Schools of Pharmacy. A review article in 1998 by the same authors, further extended their earlier results and had within the body of the document, that pharmaceutical houses, particularly in the US, had little regard for chemists with formal academic training in organic chemistry and with substantial training in biological topics. Then in 2000, a much more complex analysis covering eight major countries with schools of medicinal chemistry (all in Pharmacy Schools) demonstrated that the earlier findings were replicated but with inter-country variations. From these findings, Professor Mitscher and his colleagues were able to influence the curricula that medicinal chemists would be using.

It is a pity that a similar analysis has not been done in the last 16 years, as today, drug discovery requires that organic chemists need a very good background in biological areas (which medicinal chemists in Schools of Pharmacy have), to design molecules that have 'drug-like properties'. It is apparent that Professor Mitscher and his colleagues were well ahead of their time in their analyses.

In the late 1980s I was at Lederle Laboratories working in their antibiotic discovery program, and knew the chemists that were involved in the synthesis and discovery of what became 'tigecycline'. The organic chemists involved realized that the basis for their work was the earlier discoveries made by Professor Mitscher during his time at Lederle, and they also realized that the materials which they synthesized had to be biologically relevant, otherwise all that they would have been doing would have been some elegant synthetic work around a natural product backbone. Some of the chemists involved had been recruited as synthetic chemists but others had significant biological training in their backgrounds, and they worked 'hand-in-glove' with microbiologists in their discovery and then subsequent development of these agents.

If one then does a literature search as I did using the Scopus database, the breadth of Professor Mitscher's interests and the vast number of world-wide scientists that cited his work became apparent. The scientific world lost a major influence for medicinal chemistry, particularly based on natural products, on his death, but he was able to pass on his love of medicinal chemistry and natural products as leads, to many current groups, so his influence will continue.

### CONFLICT OF INTEREST

The author declares no conflict of interest.

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