

Obituary



HANS BUNDGAARD IN MEMORIAM

Professor Dr. Pharm. Hans Bundgaard, of The Royal Danish School of Pharmacy in Copenhagen, passed away on October 9, 1992 at the age of only 47 years after a 1-year's severe disease. He was very sadly missed at the celebration of the 100th anniversary of the Royal Danish School of Pharmacy at the end of October 1992. He was Professor of Pharmaceutical Chemistry and well known internationally for his important research contributions to the field of prodrugs as drug delivery systems. His list of publications is most impressive with 335 scientific papers, many of which were co-authored by scientists from all parts of the world. He was a member of the Editorial Board of *Pharmaceutical Research* and contributed greatly to the quality standard of the journal, in which his team also published regularly.

Hans Bundgaard graduated in pharmacy in 1968 and 10 years later he obtained the Danish Pharmaceutical Doctor Degree. His early research dealt with chemical and pharmaceutical aspects of drug allergy (penicillins, cephalosporins, and acetyl salicylic acid). Subsequently, he developed a very active research program in the area of prodrugs with the objective to improve the pharmaceutical and pharmacokinetic properties of the parent drug molecule. His scientific approach was unique through its integration of the disciplines of medicinal chemistry, analytical chemistry, and pharma-

ceutics. He worked on esterification of pilocarpine and timolol to improve corneal penetration in glaucoma, as well as on prodrugs of 5-fluorouracil to improve oral and rectal absorption. More generally, he showed that esters of *N,N*-disubstituted glycolamides are a useful biolabile prodrug type for carboxylic acids, e.g., antibiotics and nonsteroidal antiinflammatory drugs. In addition aminomethyl benzoate esters of poorly water soluble compounds (acyclovir, metronidazole, and corticosteroids) were shown to possess high aqueous solubility, high stability in solution, and high susceptibility to enzymatic hydrolysis in plasma. In more recent years, Hans Bundgaard and his co-workers studied chemical delivery systems for small peptides, like TRH (tripeptide). Using pyroglutamyl benzylamide as a model compound, it was shown that modification of the imidazole moiety into *N*-alkoxycarbonyl derivatives may offer suitable prodrug forms of peptide drugs with improved absorption behavior.

Through his research achievements as published in the international scientific literature, Hans Bundgaard became very well known and highly appreciated among the international community of pharmaceutical scientists. In addition, he was invited to present his work at numerous scientific symposia and meetings all over the world. He was for many years Chief-Editor of the scientific edition of a Danish pharmaceutical journal and in the past few years co-editor of *Acta Pharmaceutica Nordica*. He was also a member of the Editorial Board of several other international journals.

Hans Bundgaard was a hard-working and dedicated researcher and at the same time a very kind, open-minded, and helpful person. He was an excellent and stimulating supervisor for his many research students and among the students of the school of pharmacy a popular teacher. He gained many friends in all parts of the world because of his fine personality and enthusiasm and engagement in drug research. Hans Bundgaard will be remembered by his outstanding contributions to the pharmaceutical sciences and to the development of pharmacy. He will most be missed by his wife Charlotte and his two children Christoffer and Pernille. We will honor and save the memory of a dear friend.

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