

Cover legend: **Olaf-Georg Issinger**; a member of The Editorial Academy of
The International Journal of Oncology



Dr Olaf-Georg Issinger is Professor of Biomedicine at the Department for Biochemistry and Molecular Biology at the University of Southern Denmark in Odense, Denmark. He received his Ph.D. in 1973 in Molecular Genetics from the University of Freiburg, Germany. He worked as a postdoctoral fellow at the Department for Biological Chemistry at the University of California, Davis, USA. He moved from Davis to the University of Stuttgart, Germany, where he worked as a Research Scientist and received his Habilitation. From Stuttgart he moved to the University of Saarland, Homburg, Germany, where he worked as a Senior Research Scientist and where he became Apl. Professor in Molecular Biology, in 1988.

In 1986/87, he worked as a guest researcher for 5 and 4 months, respectively, supported by a prestigious stipend from the Japanese Foundation for Promotion of Cancer Research (FPCR) to work at the National Cancer Center in Tokyo on the characterization of tumor promoters.

In 1996, Dr Issinger joined the Department of Biochemistry at Odense University, as a Full Professor of Biomedicine, and where he was Head of the Institute from 1998 to 2000.

In 2009, he took a sabbatical at the St. Vincent's Institute for Medical Research in Melbourne in the laboratory of Professor Bruce Kemp on the identification and characterization of AMPK activators.

The main research focus of Professor Issinger is the role of protein kinases in signal transduction with focus on cancer,

especially, prostate, kidney and breast cancer. He was the first to show that protein kinase CK2, the first protein kinase to be described (1954) is highly expressed in proliferating cells and tissues, especially in tumors. He was also the first to clone and express CK2 from human and plant origin. The human and plant recombinant CK2 products were the basis for the first structures of both the plant and the human CK2 protein kinases which were elucidated together with Dr Karsten Niefind (University of Cologne).

Moreover, he showed that the knockout of the CK2 β subunit in mice was lethal in the early stages of embryogenesis, emphasizing the vital importance of the CK2 and its subunits in higher organism.

Recent results from Dr Issinger's lab include the identification of resorufin as the most selective CK2 inhibitor so far described, opening a new approach for the design of specific and potent inhibitors of CK2, which lately is recognized as a druggable kinase and for which the first clinical trials are ongoing.

A large part of his work is dedicated to the characterization of the two paralogues CK2 α and α' . His work is thriving and propelling the field forward and has resulted in an explanation how CK2 can be regulated in a so far not described mode, lacking phosphorylation for activation as in the case of the MAPK, or interaction with a specific protein, as is the case for CDK/cyclins.

In the case of the hetero-tetrameric CK2 $\alpha_2\beta_2$ complex, aggregation leads to inactivation and disaggregation to activation of the enzyme, independent of endogenous phosphorylation. In the case of the hetero-trimeric CK2 $\alpha'\beta_2$ complex such a regulation is not possible, hence this complex is truly constantly active.

Professor Issinger is author of more than 180 peer-reviewed publications and reviews. He has been an invited lecturer at many international symposia and supervised more than 40 Ph.D. M.D. and diploma students as well as postdocs and visiting scientists.

Dr Issinger is the founder of KinaseDetect ApS, a company that provides academia and industry with products for protein kinase research and drug development.