

Honorary Member, Nobel Prize Laureate

Professor Brian K. Kobilka and his work on GPCRs

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Brian K. Kobilka (born May 30, 1955, in Little Falls, Minnesota) is an American physiologist/pharmacologist/cardiologist who received the 2012 Nobel Prize in Chemistry together with Robert J. Lefkowitz for “discoveries on G protein-coupled receptors”. He teaches Pharmacology and leads a research laboratory at the Department of Molecular and Cellular Physiology at Stanford University School of Medicine. He is also the co-founder of ConfometRx, a biotechnology company focusing on G protein-coupled receptors.

Kobilka graduated from Little Falls High School and then received a Bachelor’s Degree in Biology and Chemistry from the University of Minnesota in Duluth. He earned his M.D. from Yale University School of Medicine. Following the completion of his residency in internal medicine at Barnes-Jewish Hospital in St. Louis, Missouri, Kobilka worked in research as a postdoctoral fellow in the laboratory of R.J. Lefkowitz at Duke University, where he started work on cloning the β_2 -adrenoceptor gene in 1984. Kobilka moved to Stanford in 1989. He was a Howard Hughes Medical Institute (HHMI) investigator in 1987-2003.

Kobilka is best known for his research on the structure and activity of G protein-coupled receptors (GPCRs); in particular, work from Kobilka's laboratory determined the molecular structure of the β_2 -adrenoceptor. This was an important breakthrough, not only because GPCRs are important targets for pharmaceutical therapeutics, but also because they are notoriously difficult to work with in X-ray crystallography. Before, rhodopsin was the only GPCR whose structure had been determined at high resolution. The β_2 -adrenoceptor structure was soon followed by the determination of the molecular structures of different receptor conformations (inactive and active) and of several other GPCRs. A “professional autobiography” of Kobilka’s research on GPCR structure is presented in his Nobel Lecture¹.

1. Kobilka BK. *Angew. Chem. Int. Ed.* **2013**, 52, 6380 – 6388