

## Microsymposium

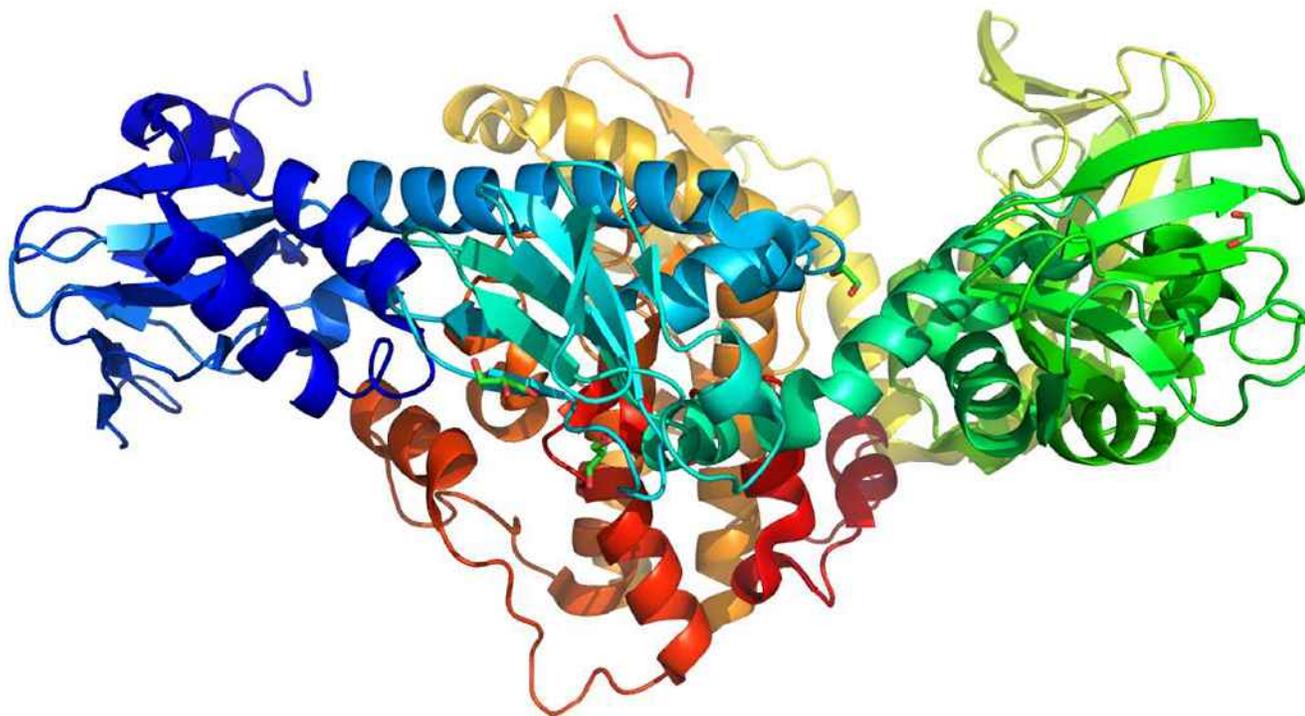
MS78.O01

*First structure of a cGMP-dependent protein kinase*

R. Hui<sup>1</sup>

<sup>1</sup>*University of Toronto, Structural Genomics Consortium, Toronto, Canada*

PKA and PKG are two of the eponymous members of the AGC family of protein kinases as well as two of the earliest protein kinases discovered. Due largely to contributions from structural biology, the mechanism of cooperative and allosteric regulation of PKA is well understood. On the other hand, no structure of PKG from any organism has been available until recently. We present the first ever structure of PKG from the malaria parasite *Plasmodium falciparum*. The structure features PKG in its auto-inhibited form - a pentagonal arrangement of 4 cGMP-binding sites and the catalytic kinase domain. By comparing of this structure with PKA structures, we propose a novel mechanism of cooperativity and allostery by which *Plasmodium* PKG is regulated.



**Keywords:** PKG, cyclic nucleotide signaling