Signal transduction from the receptor to the effector machinery of the cell is the basic process affecting the homeostasis of not only single cells but the whole organism. The aim of this project is to explore the process of signal transduction by the G proteins, and in particular, to investigate the molecular mechanism of the interactions between the latter with the intracellular part of the opioid receptors. The knowledge of that process will allow our better understanding of the signaling pathways in the cells, and will open new opportunities to modulate that signals.