Abstract

Membrane microdomains enriched in cholesterol and sphingolipids, known as lipid rafts and caveolae, contribute to many cellular processes including cholesterol homeostasis or lateral segregation of membrane proteins. This bachelor thesis describes the role of these membrane microdomains on transmembrane signaling mediated by G protein-coupled receptors. This is the most numerous and diverse family of receptors in mammalian cells that can affect a large number of physiological functions of the organism. A large amount of GPCR located in the membrane microdomains that concentrate specific signal components increase the variability of signaling. This issue is very complicated because the methods used to characterize these variable structures have limitations and each of the receptors exhibits specific behaviour.

Key words: GPCRs, G proteins, lipid rafts, caveolae, transmembrane signaling