Abstract

Integrins are heterodimeric transmembrane glycoproteins that represent a large group of cell adhesion receptors involved in cell-cell, cell-extracellular matrix and cell-pathogen interactions. Up to now, 24 different integrin heterodimers have been detected in mammals. They are involved in a wide range of processes such as immune response, lymphocyte homing, platelet aggregation, also in wound healing, cell differentiation, migration, proliferation and even in cell survival. Integrins have also been detected on germ cells and are now known to play an important role in reproductive processes such as fertilization, embryo implantation, and embryonic development. The main aim of this thesis is to introduce integrins from the perspective of reproduction, integrin physiology, occurrence and localization of individual subunits in male and female germ cells. A significant part of the work is devoted to a discussion of the role of integrins in gametes, both during maturation processes (egg maturation in the ovary, capacitation and the acrosomal reaction of sperm), in sperm migration, oviductal reservoir formation and their direct and indirect involvement in adhesion and fusion of the gametes during fertilization.

Keywords: integrins, sperm, egg, fusion, fertilization