

ABSTRACT The MRP membrane proteins, which belong to the ABC transporter family, comprise currently 9 members. The MRP transport proteins are expressed in various tissues of the organism, including placenta. The major physiological role of the multidrug transporters is the transport of many endogenous and exogenous compounds, including drugs, across the cell membrane. This thesis summarizes up to date information concerning expression and function MRP transporters in placenta and in other tissues in organism. Only five MRP transporters have been detected in placenta, namely MRP1, MRP2, MRP3, MRP5 and MRP8. Expression of all these proteins in placenta changes with progress of the pregnancy. MRP transporters help to protect fetus from potentially toxic substances, on the other hand some of them can facilitate the passage of substances across placenta. Some MRPs possess specific physiological functions in placenta. For example, MRP1 influences apoptosis, MRP5 participates in NO-dependent vasodilatation in fetal vessels.