2. Aim of the Work

MN/CA IX protein is classified as a member of the carbonic anhydrases family, as such with rather unusual properties. It is thought to partake in acid-base balance, but also it might act in intercellular communication and cell proliferation in the gastrointestinal tract, where it is normally expressed.

Initially, MN/CA IX protein was identified as a molecule involved in carcinogenesis. Characteristically, MN/CA IX is ectopically expressed in various human carcinomas originating from MN/CA IX - negative tissues, and absent in tumors from MN/CA IX - positive ones. However, the role of MN/CA IX protein in physiological or pathological processes seems complex and is largely unknown.

Based on this, we decided to generate a mouse with a null mutation in the *MN/CA9* gene. These mice, if viable, should allow to study the physiological role of MN/CA IX protein and phenotypical consequences of the *MN/CA9* gene deletion *in vivo* and *in vitro*. Furthermore, mice lacking MN/CA IX could be used to study the proposed role in tumorigenesis.

In order to construct a targeting vector, suitable for disrupting murine *MN/CA9* gene by homologous recombination, the mouse *MN/CA9* cDNA and genomic DNA has to be identified and characterized. For further studies of the murine MN/CA IX protein the specific antibody will be prepared.