Abstract:

Human carbonic anhydrases are zinc metalloenzymes playing a key role in several physiological and pathophysiological processes. CA IX is a tumor associated transmembrane isozyme representing a valuable therapeutic target. Results concerning expression, purification, and crystallization of CA IX as well as structural studies of CA II in complex with novel class of small molecular inhibitors are presented. Furthermore, structural studies of Fab fragment of monoclonal antibody M75 and its complex with epitope peptide derived from unique proteoglycan-like domain of CA IX are part of this work.

Keywords: cancer, carbonic anhydrase, carbonic anhydrase inhibitors, Fab crystal structure, antigen-antibody recognition