ABSTRACT

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Title: Basic characterization of human enzymes DHRS7B and DHRS7C

Human enzymes of the short-chain dehydrogenase/reductase (SDR) superfamily play an important role in wide range of biochemical pathways. They are involved in metabolism of lipids, saccharides, amino acids, steroid hormones, retinoids, prostaglandins etc. Besides physiological processes, they take part in development of several serious diseases, e.g. hormone-dependent cancer, metabolic syndrome, diabetes mellitus. Moreover, SDR enzymes contribute to biotransformation of xenobiotics. Nevertheless, approximately 30 % of SDRs remain completely uncharacterized. Human dehydrogenase/reductase SDR family members 7B (DHRS7B) and 7C (DHRS7C) belong to poorly characterized members of the SDR superfamily. According to *in silico* predictions, both enzymes are membrane bound and involved in reductive reactions. The aim of this study was to determine their basic biochemical properties. The results show that both enzymes interact with the membrane of endoplasmic reticulum and face cytosol. The pilot screening of enzymatic activity was performed. Reducing activity was detected towards e.g. estrone, androstendione, progesterone, glucose, glyceraldehyde, prednisone, ketoprofene or ketotifene for both enzymes with higher values in the presence of NAD(H) as cofactor.