

ABSTRACT

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Title of diploma thesis: Expression of DHRS8 and DHRS12 enzymes in human tissues

Dehydrogenase/reductase (SDR family) member 8 (DHRS8, SDR16C2) and dehydrogenase/reductase (SDR family) member 12 (DHRS12, SDR40C1) are human microsomal enzymes belonging to the superfamily of short-chain dehydrogenases/reductases (SDR). This superfamily represents one of the largest protein groups. SDR enzymes participate in the metabolism of various xenobiotic and endogenous compounds and are involved in physiological and pathological processes. However, there are still many enzymes which are only poorly characterised.

To this date, the expression on mRNA level and catalytic activity toward 5α -androstane- $3\alpha,17\beta$ -diol are the only available information about DHRS8. Moreover, there is still no published information (apart from the prediction) regarding DHRS12.

The aim of this study was to examine the protein expression of DHRS8 and DHRS12 enzymes in various human tissues. The tissue samples were collected from four middle aged male subjects after the sudden death without apparent disease. Proteins of interest were detected using western blotting and specific antibodies. Recombinant form of searched proteins (DHRS12, DHRS8) expressed in *Sf9* insect cells was used as a control.

According to our results, DHRS8 is widely expressed in many tissues with the highest level in the liver and adrenal glands. On the other hand, the expression of DHRS12 was detected only in the brain. Our data could help to estimate the role of these enzymes in human body.