

CONVERSION OF CHOLESTEROL TO PREGNENOLONE BY THE MITOCHONDRIAL DESMOLASE COMPLEX

S u m m a r y

The data concerning the structure of the mitochondrial desmolase complex, which converts cholesterol to pregnenolone has been described. The desmolase contains: NADPH dependent adrenodoxin reductase (AdxR), soluble adrenodoxin (Adx) and cytochrom P450 of the CYP 11 gene family. The crystal structure of the desmolase components, as well as the electron transport mechanism conducted by this complex, were recently established; the mechanisms

which regulate the desmolase activity are fragmentally recognized, however, tissue specific regulatory systems exist. The main factor limiting desmolase activity, recently discovered, is the delivery of cholesterol from the outer to the inner mitochondrial membrane. This system depends on a permanent synthesis of cholesterol transporting protein StAR (in adrenals) or proteins with a similar function in other tissues (eg. placenta).