Comparison of Subcellular Distribution of Mouse Mevalonate Pyrophosphate Decarboxylase between Stroke-Prone Spontaneously Hypertensive rat and Wistar Kyoto Rat

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ABSTRACT: We previously reported that the lower activity of mevalonate pyrophosphate decarboxylase (MPD) was caused by the reduced amount of this enzyme in stroke-prone spontaneously hypertensive rat (SHRSP) by immunoblot analysis using 20000 x g supernatant containing cytosol and microsome. Recently study, at least three different subcellular compartments, including peroxisomes, are involved in cholesterol synthesis. In this study, we examined the subcellular distribution of 45- and 37-kDa MPD in the liver of SHRSP and carried out a comparison of normotensive Wistar Kyoto rat (WKY) and SHRSP. 45-kDa MPD was detected in the cytosol and peroxisome of SHRSP. 37-kDa MPD was detected in the cytosol of SHRSP, but not in the peroxisome. Since the relative enrichment of 45-kDa MPD in peroxisome was lower than that of LDH, it was suggested a possibility that 45-kDa MPD of SHRSP did not exist in the peroxisome. Also, 45-kDa MPD was decreased in the crude extract containing 0.1% Triton X-100, cytosol and peroxisome of SHRSP, and 37-kDa MPD was decreased in the crude extract containing 0.1% Triton X-100 and cytosol of SHRSP, as compared with WKY. These data indicate that the cholesterol synthesis in the liver of SHRSP by the reduced amount of MPD is significantly reduced.
く存在していることが示唆された。また、SHRSP中の45-kDa MPDはWKYに比べ、ペ
ルオキシソーム、細胞質、肝抽出液のすべての画分において減少していることが示唆され
た。SHRSP中の37-kDa MPDはWKYに比べ、細胞質、肝抽出液の画分において減少し
ていることが示唆された。これらのデータはMPD減少によりSHRSP中の肝におけるコ
レスステロール合成を十分に減少させることを示す。

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