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Rapid Communication

LDL-receptor mRNA expression in liver regeneration after partial hepatectomy

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Cholesterol is a major component of the cellular membrane and is required essentially in the regeneration of the liver(1). Cellular cholesterol is supplied by de novo biosynthesis or LDL uptake via LDL-receptor. Cholesterol biosynthesis is down-regulated by LDL uptake via LDL-receptor on the cell surface(2). However, so far, the exact involvement of the LDL-receptor is not known in the liver regeneration. We have studied the expression of the LDL-receptor genes in the livers of the rats during regeneration after partial hepatectomy.

The rat liver specimen was obtained before and after partial hepatectomy. Poly(A^+) RNA obtained from rat liver was used to analyze LDL-receptor mRNA levels and transcript size by using Northern blot analysis. A cDNA clone of human LDL-receptor mRNA was kindly provided by Dr. Yamamoto(3).

Expression of LDL-receptor mRNA was gradually increased up to the second and third days after partial hepatectomy and returned to normal levels(Fig).

This result indicates the cholesterol supply from circulating LDL lipoprotein via LDL-receptor would be urgently required in the liver regeneration after partial hepatectomy.

Ref.)

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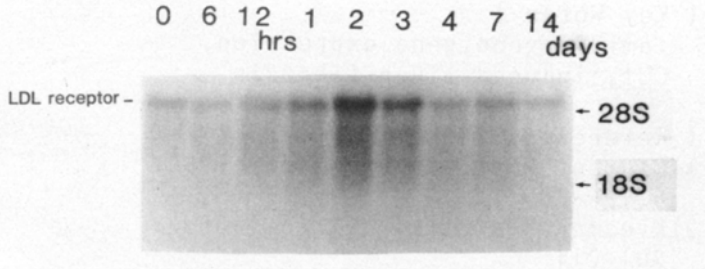
2. Brown MS, Goldstein JL: Science 1986;232:34-47
3. Yamamoto T, Davis G, Brown MS: Cell 1984;39:27-38



Expression of LDL receptor mRNA in the rat liver during regeneration after partial hepatectomy

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