- Name: HMG-CoA reductase (3-hydroxy-3-methyl-glutaryl-coenzyme A reductase, officially abbreviated HMGCR)
- Effect:

  Competitive inhibitors of the reductase induce the expression of LDL receptors in the liver, which in turn increases the catabolism of plasma LDL and lowers the plasma concentration of cholesterol, which is considered, by those who accept the standard lipid hypothesis, an important determinant of atherosclerosis.
- Usage:

  This enzyme is thus the target of the widely available cholesterol-lowering drugs known collectively as the statins.

  Due to the removal of atherogenic lipoprotein particles, such as LDLs and intermediate density lipoproteins, HMGCR inhibitors have been proven to be efficient in reducing cardiovascular diseases from the blood circulation, which is represented by the reduction of LDL-cholesterol levels.
- Subject affect:
  - Drugs

  Drugs that inhibit HMG-CoA reductase, known collectively as HMG-CoA reductase inhibitors (or "statins"), are used to lower serum cholesterol as a means of reducing the risk for cardiovascular disease.
  - Hormones

  HMG-CoA reductase is active when blood glucose is high. The basic functions of insulin and glucagon are to maintain glucose homeostasis. Thus, in controlling blood sugar levels, they indirectly affect the activity of HMG-CoA reductase, but a decrease in activity of the enzyme is caused by AMP-activated protein kinase, which responds to an increase in AMP concentration, and also to leptin.
- Side effect:

  There have been controversies surrounding the potential of statins increasing the risk of new-onset diabetes mellitus (NOD).
- Precautions:

  Diabetics need to use cautiously.