

While squalene is found in the oils of olive, palm, wheat-germ, amaranth and rice-bran, the greatest concentration is found in shark liver oil.

Squalene is the biochemical precursor to the whole family of steroids. Oxidation via squalene monooxygenase of one of the terminal double bonds of squalene yields 2,3-squalene oxide, which undergoes enzyme-catalyzed cyclization to afford lanosterol, which is then elaborated into cholesterol and other steroids.

Synthesis in the body starts with one molecule of acetyl-CoA and one molecule of acetoacetyl-CoA, which are dehydrated to form 3-hydroxy-3-methylglutaryl-CoA (HMG-CoA). This molecule is then reduced to mevalonate by the enzyme HMG-CoA reductase. This step is the regulated, rate-limiting and irreversible step in cholesterol synthesis and is the site of action for the statin drugs (HMG-CoA reductase competitive inhibitors). Yet squalene is much more a precursor to cholesterol. In fact, 20% of synthesized squalene is used for cholesterol synthesis. The other 80% is stored or used as an antioxidant.