

**SYNTHESIS AND SOME PROPERTIES OF CHOLESTERYL (¹⁴C)14-METHYL-
HEXADECANOATE.**

J. Sommerau and J. Hradec

Oncological Institute, Prague, Czechoslovakia

Cholesteryl 14-methylhexadecanoate (CMH) stimulates protein synthesis and is apparently a physiological component of some enzymes required for these processes (Hradec and Dolejš, *Biochem. J.* 107, 129, 1968, Hradec and Dušek, *Biochem. J.* 115, 873, 1969). For further studies on the mode of action of this compound its availability in a labelled form was essential. (U-¹⁴C)14-methylhexadecanoic acid was isolated from *Chlorella* grown in a ¹⁴CO₂ atmosphere and purified by preparative gas-liquid chromatography. The fatty acid was liberated from its methylester by alkaline hydrolysis under nitrogen. The free acid was converted to its chloride by the treatment with thionyl chloride. The resulting acyl chloride was mixed with a solution of non-labelled purified cholesterol in diisopropylether and this mixture was refluxed for 30 min.. The reaction product was applied onto thin layers of silicic acid that were developed in petroleum ether: ethylether (98:2). Cholesteryl 14-methylhexadecanoate had an R_F of 0.68. Unreacted cholesterol and fatty acid remained on the starting line. This unreacted acid was recovered and used repeatedly (up to 3 times) with new lots of cholesterol for the preparation of the ester. The over-all yield of the synthesis was 43.5% of the starting labelled material. The purity of the final product was checked by thin layer chromatography followed by radioautography and scanning of the radioactivity. CMH synthesized in this way was free of cholesterol and unreacted fatty acid. The proposed synthetic procedure may be also used for the synthesis of doubly labelled CMH using tritiated cholesterol. The action of CMH with ribosomes and peptide elongation factors in mammalian cell-free systems.