

SYNTHESIS OF FLUORINE ANALOGUES OF VITAMIN E

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The biological activity of Vitamin E is believed to be related to the anti-oxidative property of the 6-chromanol structure. Vitamin E comprises a number of isomers, with differences in the number of methyl substituents on the benzene ring and the structure of the side chain at the 2-position. Vitamin E is believed to combine with the cell membrane and to suppress the oxidation of unsaturated fatty acids on the membrane. If this is correct, the differences of activity of Vitamin E compounds must be attributed to differences in their affinity for the membrane besides difference of the electronic property of the 6-chromanol part. Thus, we synthesized analogues of Vitamin E with fluorine substituents on the side chain or on the benzene ring, since these substituents might change the lipophilicity and/or the electronic property of Vitamin E.

Synthesis of these analogues and their biological properties will be presented.