

ABSTRACT**METHOD OF SYNTHESIS**

Described is a method of synthesizing 6-(5-ethoxyhept-1-yl)bicyclo[3.3.0] octan-3-one by reacting 3-(5-ethoxyhept-1-yl) cyclopentene with dichloroketene. The resulting reaction products are reacted with acetic acid and zinc to produce 4-(5-ethoxyhept-1-yl)bicyclo[3.2.0]heptan-6-one and 4-(5-ethoxyhept-1-yl)bicyclo [3.2.0]heptan-7-one, which are reacted with trimethylsulfonium iodide to produce 2-(5-ethoxyhept-1-yl)spiro[bicyclo[3.2.0]heptane-6,2'-oxirane] and 4-(5-ethoxyhept-1-yl)spiro-[bicyclo[3.2.0]heptane-6,2'-oxirane]. Lithium iodide is reacted with 2-(5-ethoxyhept-1-yl)spiro[bicyclo[3.2.0]heptane-6,2'-oxirane] and 4-(5-ethoxyhept-1-yl)spiro-[bicyclo[3.2.0]heptane-6,2'-oxirane] to produce 6-(5-ethoxyhept-1-yl)bicyclo[3.3.0]octan-3-one. A method of synthesizing 6-(5-methoxyhept-1-yl)bicyclo[3.3.0]octan-3-one is also described.

FIG. 2