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(54) Title: OLIGOMERIC COMPOUNDS

(57) Abstract: A method is provided for the synthesis of a compound of general formula  $H(OCH[CH_3]CH_2C[O])_n-O-A-O-R$  wherein  $n$  is an integer of 3 to 10,  $A$  is the residue of a dihydric alcohol and  $R$  is  $H$ ,  $C_{1-4}$  alkyl or  $H(OCH[CH_3]CH_2C[O])_n$  comprising reacting a cyclic oligomer of (R)-3-hydroxybutyrate containing between 3 and 10 (R)-3-hydroxybutyrate moieties with a dihydric alcohol in an organic solvent in the presence of a lipase. Preferably the method provides 1,3-butandiol ester mono- and di-adducts of tri-(R)-3-hydroxybutyrate oligomers, which have been produceable in pure form and not isolated previously. Also, the method provides for the synthesis of oligomeric ester mixtures of (R)-3-hydroxybutyrate by the acidified hydrolysis of poly(3-hydroxybutyrate) in the presence of 1,3-butandiol and 1,2-dichloroethane. Such esters have utility in producing ketogenesis, for both physiological and medical purposes. These oligomers are bioavailable when administered by either the oral or intravenous route and can, therefore, be used acutely or chronically to evoke ketogenesis to prevent cytotoxic damage to the organs of the body, and to treat or prevent, particularly by sustainable ketogenesis, a variety of medical conditions of the peripheral organs and brain, including psychiatric and neurological diseases.

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**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US05/25308

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(8): **A61K 31/275**( 2006.01);**C07C 69/66**( 2006.01)  
  
 USPC: **560/178;514/526**  
 According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**  
 Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 560/178;514/526

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 WEST SEARECH DONE. THE CAS-ONLINE SEARCH DONE.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,207,856 B1 (VEECH) 27 March 2001(27.03.2001), col. 15 ,lines 57-66.	1-18

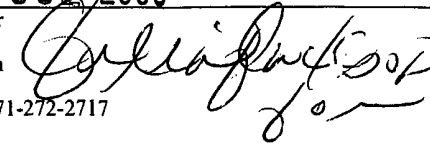
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