United States Patent [19]

Kurono et al.

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[54] **INTERMEDIATES FOR SYNTHESIZING BH_4 AND ITS DERIVATIVES**

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Related U.S. Application Data

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[30] **Foreign Application Priority Data**

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Jun. 22, 1988	[JP]	Japan	63-152217

[51] **Int. Cl.**[5] **C07D 239/47**

[52] **U.S. Cl.** **544/320**

[58] **Field of Search** 544/320

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,939,252 7/1990 Schwartz 544/320

OTHER PUBLICATIONS

Chemistry of Organic Synthesis, vol. 46, No. 6 (1988), p. 570.

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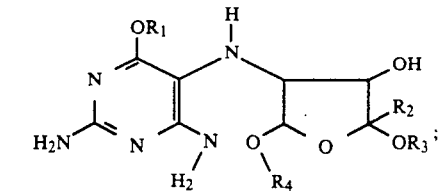
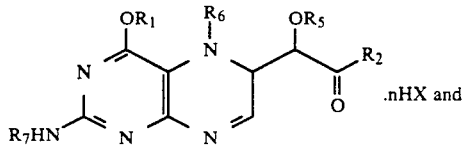
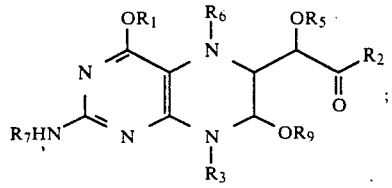
[57] **ABSTRACT**

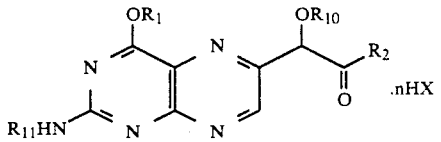
The present invention relates to intermediates for synthesizing BH_4 and derivatives thereof. The intermediates are shown as follows;





.nHX and





.nHX

wherein R_1 is a hydrogen atom, alkyl, aralkyl, or aryl group; R_2 is an alkyl, hydroxyalkyl, or polyhydroxyalkyl group; R_3 and R_4 are the same or different and represent alkyl, aralkyl, or aryl group; R_5, R_6, R_7, and R_8 are the same or different and represent a hydrogen atom or acyl group; R_9 is an alkyl, aralkyl, or aryl group; R_{10} and R_{11} are the same or different and represent a hydrogen atom or acyl group; n is an integer of 5 or less; and HX is an acid. The invention also relates to a process for the preparation of L-biopterin.

1 Claim, No Drawings