

# United States Patent [19]

Hayward et al.

[11] Patent Number: 4,916,241

[45] Date of Patent: Apr. 10, 1990

[54] INHIBITION OF BONE LOSS BY  
4-SUBSTITUTED-5-HYDROXY-2(5H)-FURANONES

[75] Inventors: Marshall A. Hayward,  
Lawrenceville; Joseph P. Sabatucci;  
Ivo L. Jirkovsky, both of Plainsboro;  
Yvon Lefebvre, Plainsboro, all of N.J.

[73] Assignee: American Home Products  
Corporation, New York, N.Y.

[21] Appl. No.: 205,147

[22] Filed: Jun. 6, 1988

[51] Int. Cl.<sup>4</sup> ..... C07D 307/32

[52] U.S. Cl. .... 549/313; 540/103;  
549/320; 549/435

[58] Field of Search ..... 549/313, 320, 435;  
540/103; 514/473

[56] References Cited

## U.S. PATENT DOCUMENTS

3,436,390 4/1969 Lefebvre et al. .... 540/103

4,447,445 5/1984 Jacobs et al. .... 514/473

## FOREIGN PATENT DOCUMENTS

0209274 1/1987 European Pat. Off. .... 514/473

## OTHER PUBLICATIONS

Bourguignon et al., "Journal of Medicinal Chemistry",  
vol. 31, No. 5, pp. 893-897, May 1988.

Primary Examiner—Richard L. Raymond

Assistant Examiner—Ba K. Trinh

Attorney, Agent, or Firm—Walter Patton

[57] ABSTRACT

This invention relates to 4-substituted-5-hydroxy-2(5H)-furanones, to the process for their preparation, to pharmaceutical compositions containing said 4-substituted-5-hydroxy-2(5H)-furanones and to the use of said 4-substituted-5-hydroxy-2(5H)-furanones for modifying the balance between bone production and bone resorption in a host animal, including man.

9 Claims, No Drawings