United States Patent [19]

Lund et al.

[11] **Patent Number: 4,621,100**

[45] **Date of Patent: Nov. 4, 1986**

[54] **TREATMENT OF OSTEOPOROSIS WITH PROSTAGLANDINS**

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[21] Appl. No.: **659,138**

[22] Filed: **Oct. 9, 1984**

Related U.S. Application Data

[63] Continuation of Ser. No. 353,549, Mar. 8, 1982, abandoned, and a continuation-in-part of Ser. No. 305,580, Sep. 25, 1981, abandoned, which is a continuation-in-part of Ser. No. 247,421, Mar. 25, 1981, abandoned.

[51] **Int. Cl.**[4] **A61K 31/557**

[52] **U.S. Cl.** **514/573;** 514/155; 514/227; 514/249; 514/313; 514/315; 514/408; 514/530; 514/614; 514/693; 514/729

[58] **Field of Search** 514/171, 573, 530, 155, 514/227, 249, 313, 315, 408, 614, 693, 729

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,982,016	9/1976	Walsh	424/305
4,000,309	12/1976	Walsh	424/275
4,018,892	4/1977	Walsh	424/285
4,066,787	1/1978	Okazaki et al.	514/573
4,094,977	6/1978	Seeger et al.	514/171
4,097,601	6/1978	Schaaf	424/269
4,113,882	9/1978	Okazaki et al.	514/573
4,328,245	5/1982	Yu et al.	514/573
4,335,097	6/1982	David et al.	514/573

OTHER PUBLICATIONS

Frost–Bone Remodeling and Its Relationship to Metabolic Bone Diseases, (1973), Pub. Chas. Thomas, pp. 3–5, 36–41, 50–53, and 110.

D. Somjen, et al., Biochimica et Biophysica Acta, 627:91–100, (1980).

Yamasaki, et al., "Prostaglandin as a Mediator of Bone Resorption Induced by Experimental Tooth Movement in Rats", J. Dent. Res. 59(10):1635–1642 (10–80).

Tashjian, et al., "Biological Activities of Prostaglandin Analogs and Metabolites on Bone in Organ Culture", Nature, 266:645–647 (Apr. 1977).

Dietrich, et al., "Stimulation of Bone Resorption by Various Prostaglandins", Prostaglandins, vol. 10, No. 2, p. 631 (Aug. 1975).

Journal of Pediatrics 97:834–836 (1980).

Journal of Pediatrics 97:866–867 (1980).

Yonaga et al—Prostaglandins, vol. 17, (Apr.–Jun. 1979), pp. 801–804 and 813–819.

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[57] **ABSTRACT**

The present invention provides a novel method for treating osteoporoses, joint and dental diseases and increasing the rate of bone healing by orally administering certain prostaglandins. Further provided are novel compositions employing these prostaglandins.

7 Claims, No Drawings