United States Patent [19]

Urist

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[54] **BIODEGRADABLE ORGANIC POLYMER DELIVERY SYSTEM FOR BONE MORPHOGENETIC PROTEIN**

[75] Inventor: **Marshall R. Urist,** Pacific Palisades, Calif.

[73] Assignee: **University of California,** Berkeley, Calif.

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[51] **Int. Cl.**[4] **A61K 37/02;** A61K 35/32; C07G 7/00

[52] **U.S. Cl.** **524/21;** 524/17; 523/115; 514/21; 424/78; 604/891; 623/16

[58] **Field of Search** 524/17, 21; 523/113, 523/115, 116, 117; 424/177, 359, 78; 604/890, 891; 3/1.9

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Primary Examiner—John Kight
Assistant Examiner—Nathan M. Nutter

[57] **ABSTRACT**

Disclosed is a biodegradable polylactic acid polymer delivery system for delivery of bone morphogenic protein (BMP) to induce formation of new bone in viable tissue. The delivery composition is substantially pure BMP in combination with a biodegradable polylactic acid polymer and it is prepared by admixing the BMP with the biodegradable polymer. The composition is implanted in viable tissue where the BMP is slowly released and induces formation of new bone.

13 Claims, 6 Drawing Figures

Roentgenograms Of Mouse Thighs Showing Induced Bone Formation In Response To 5mg. Of bBMP/20mg. (Right); No Bone Formation Is Induced By 20mg Of PL Alone (Left).