



US005225439A

# United States Patent [19]

[11] Patent Number: **5,225,439**

Ueno et al.

[45] Date of Patent: **Jul. 6, 1993**

[54] **PROSTAGLANDINS E AND ANTI ULCERS CONTAINING SAME**

[58] Field of Search ..... 500/121; 562/503; 514/530, 573

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[21] Appl. No.: **681,031**

[22] Filed: **Apr. 5, 1991**

[57] **ABSTRACT**

The novel 13, 14-dihydro-15-keto prostaglandins E of the invention have remarkable preventive effects against ulcers. Further, the novel 13,14-dihydro-15-keto-prostaglandins E of the invention have an advantage that they have none of side effects which prostaglandin E intrinsically has, or can remarkably reduce such effects of the prostaglandin E. Therefore, the novel 13, 14-dihydro-15-keto prostaglandins E of the invention are effective for animal and human use for treatment and prevention of ulcers, such as duodenal ulcer and gastric ulcer.

### Related U.S. Application Data

[63] Continuation of Ser. No. 460,830, Sep. 12, 1989, abandoned, which is a continuation-in-part of Ser. No. 149,445, Jan. 28, 1988, abandoned.

### [30] Foreign Application Priority Data

Jan. 28, 1987 [JP] Japan ..... 62-18820  
Mar. 18, 1987 [JP] Japan ..... 62-65352

[51] Int. Cl.<sup>5</sup> ..... **C07C 177/00; A61K 31/557**

[52] U.S. Cl. .... **514/530; 514/573; 560/121; 562/503**

**22 Claims, 57 Drawing Sheets**