

**United States Patent** [19]

Kornfelt et al.

[11] **Patent Number:** 5,652,216[45] **Date of Patent:** Jul. 29, 1997[54] **PHARMACEUTICAL PREPARATION**

5,059,587 10/1991 Yamamoto ..... 514/12

[75] Inventors: **Troels Kornfelt**, Virum; **Henrik Rasmussen**, Copenhagen; **Flemming Steen Jensen**, Allerød, all of Denmark

## FOREIGN PATENT DOCUMENTS

WO93/12811 7/1993 WIPO .

[73] Assignee: **Novo Nordisk A/S**, Bagsvaerd, Denmark

## OTHER PUBLICATIONS

The Merck Index, 10th Edition, Monograph No. 4307, (1983).

[21] Appl. No.: **275,855***Primary Examiner*—Peter O'Sullivan  
*Attorney, Agent, or Firm*—Steve T. Zelson, Esq.; Valeta A. Gregg, Esq.[22] Filed: **Jul. 15, 1994**[30] **Foreign Application Priority Data**[57] **ABSTRACT**

May 26, 1994 [DK] Denmark ..... 0590/94

[51] **Int. Cl.**<sup>6</sup> ..... **A61K 38/26**[52] **U.S. Cl.** ..... **514/12**[58] **Field of Search** ..... 514/12

The present invention relates to a pharmaceutical preparation comprising glucagon and a stabilizing amount of a pharmaceutically acceptable ampholyte, especially an amino acid or dipeptide or a mixture thereof and optionally an excipient.

[56] **References Cited**

The preparation is stable for extended periods of time in solution at room temperature.

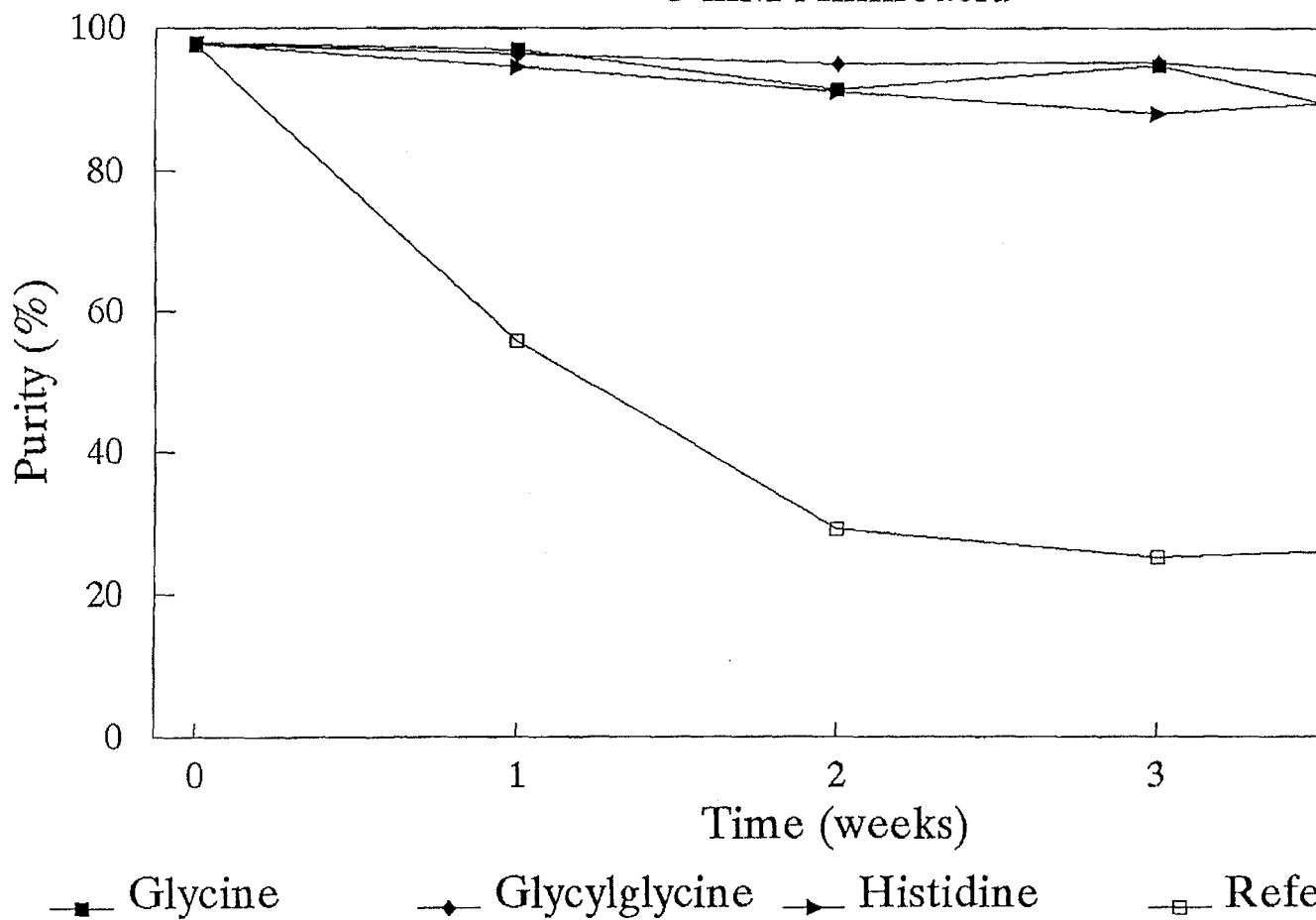
## U.S. PATENT DOCUMENTS

4,826,763 5/1989 Norris et al. .... 435/68

5,023,088 6/1991 Wong ..... 424/473

**13 Claims, 9 Drawing Sheets**

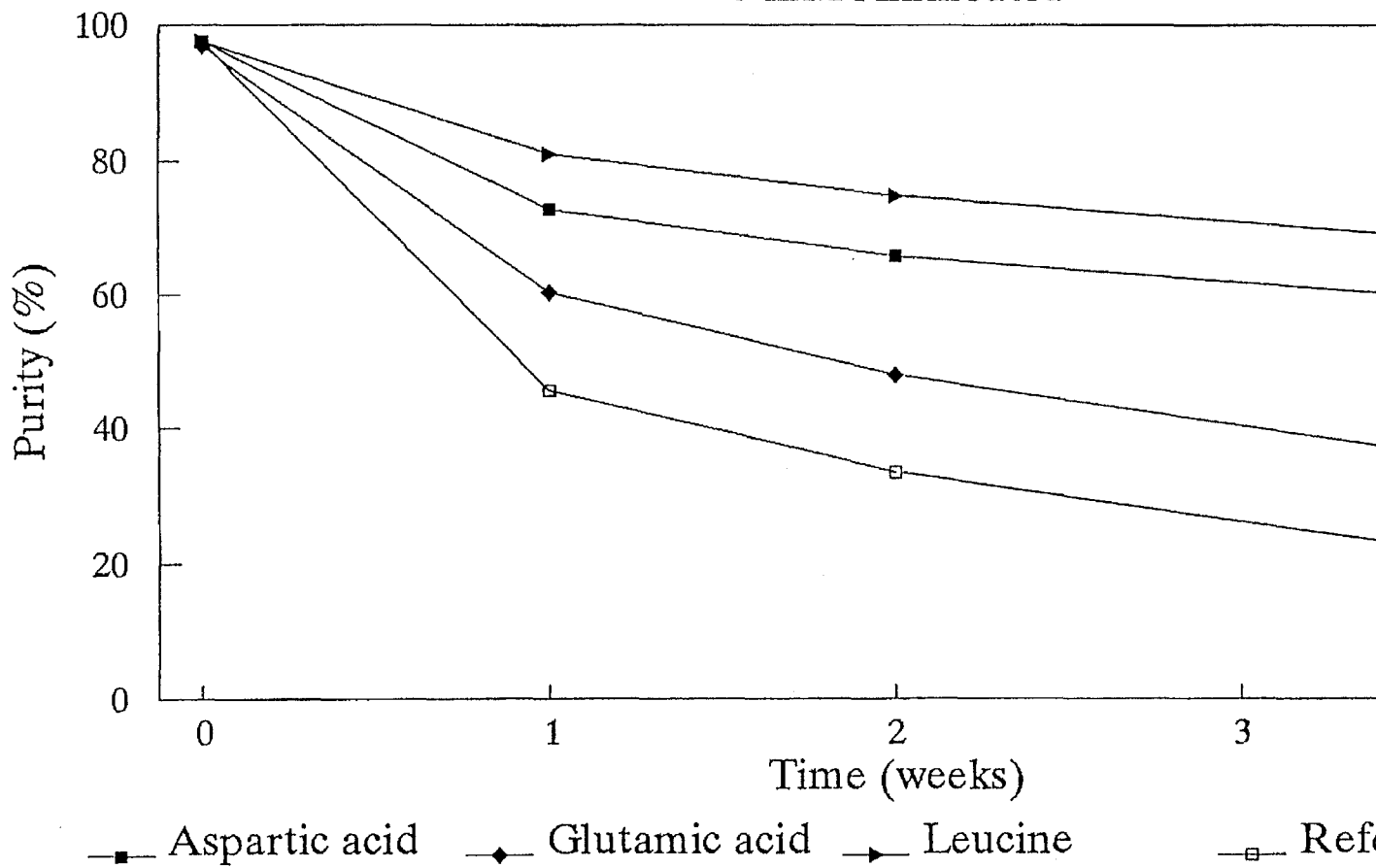
FUI-93-063. Decomposition determined by RP-HPLC. A1-A3  
5 mM Aminoacid



Accelerated stability (60°C).

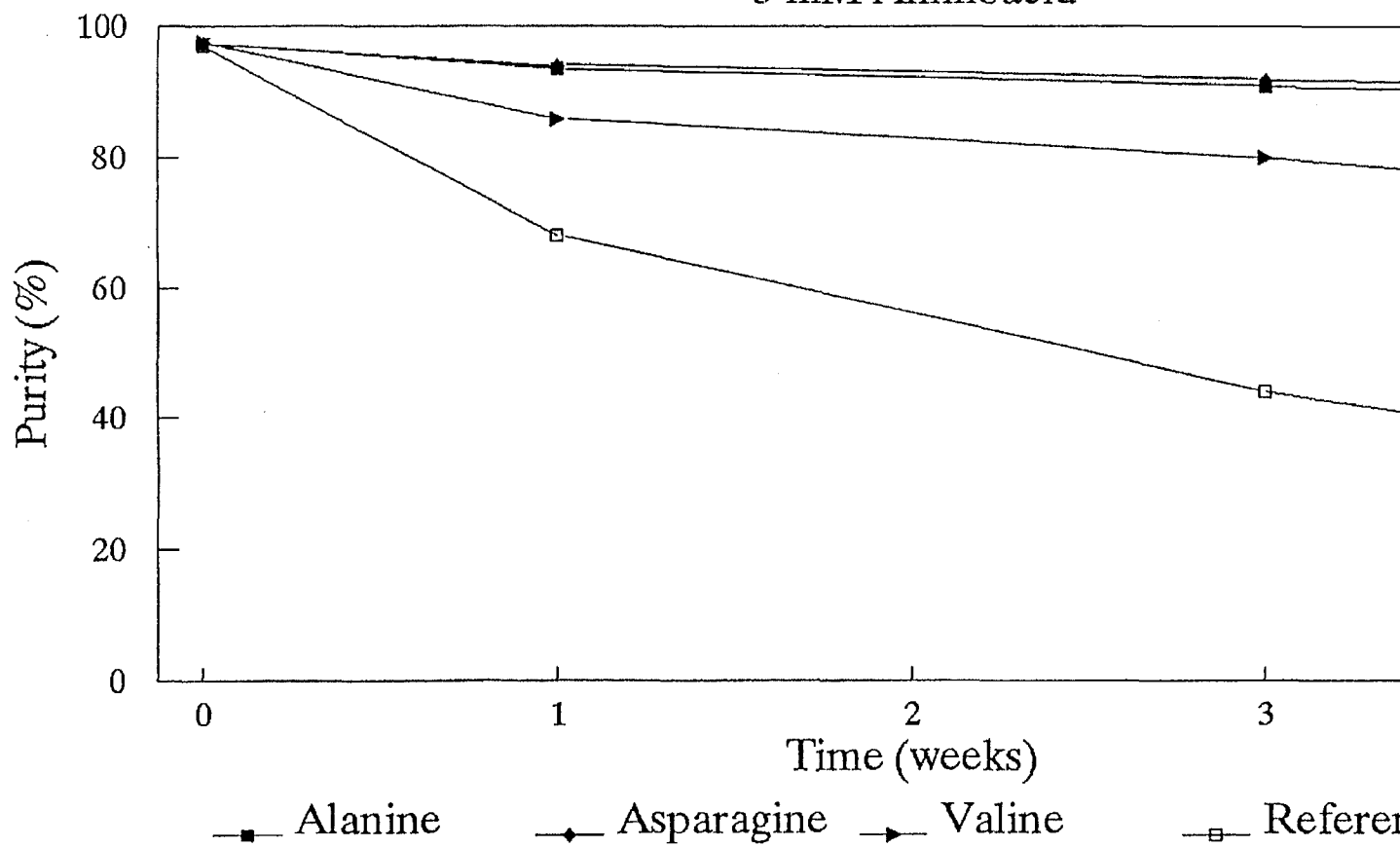
Figure 1

FUI-93-063. Decomposition determined by RP-HPLC. A  
5 mM Aminoacid



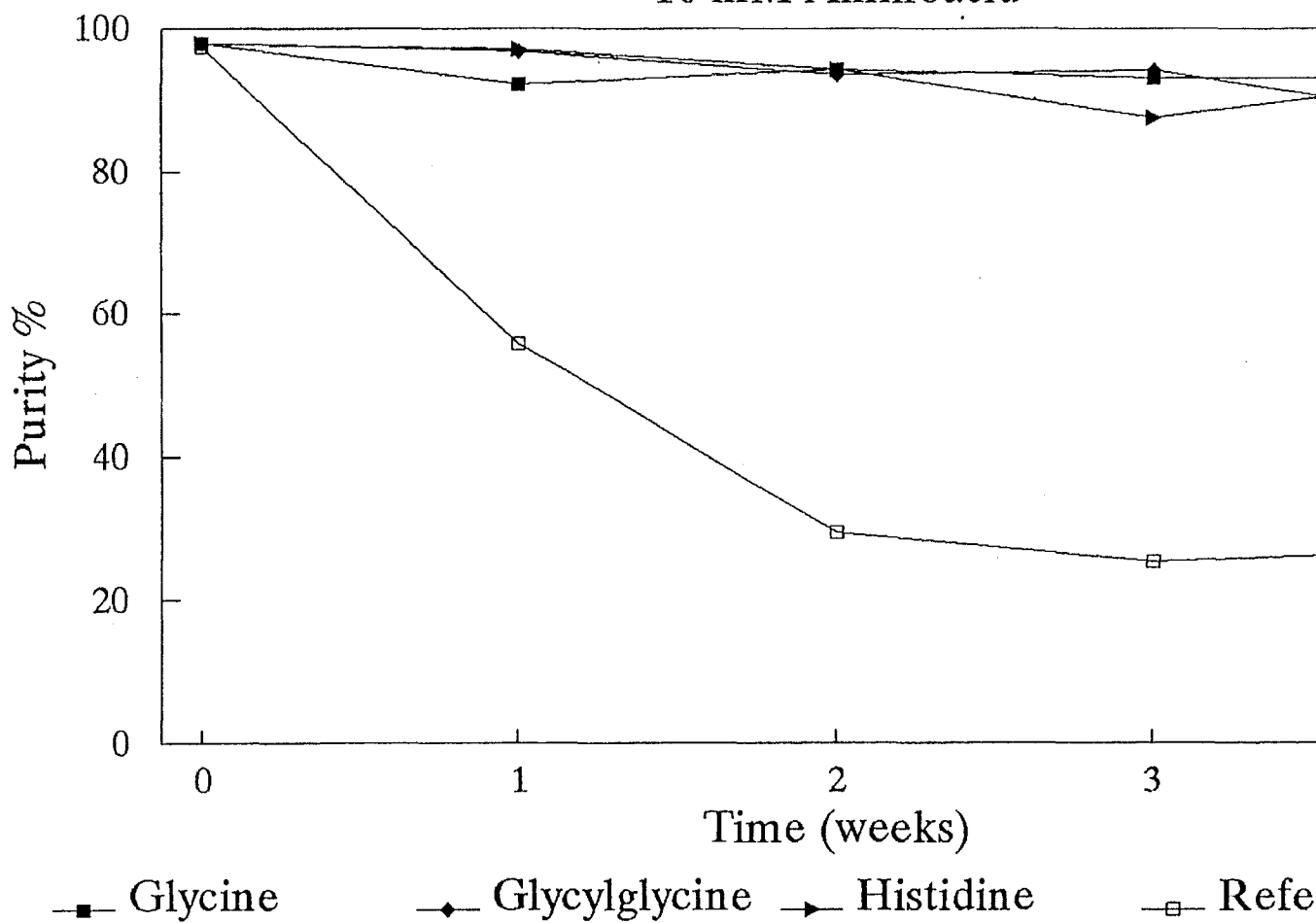
Accelerated stability (60°C).  
Figure 2

FUI-93-063. Decomposition determined by RP-HPLC. A  
5 mM Aminoacid



Accelerated stability (60°C).  
Figure 3

FUI-93-063. Decomposition determined by RP-HPLC. A1 - A3  
10 mM Aminoacid



Accelerated stability (60°C).

Figure 4

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.