

- [54] **PHOSPHOPEPTIDES FROM CASEIN-BASED MATERIAL**
- [75] Inventors: **G rard Brule; Lo c Roger**, both of Rennes; **Jacques Fauquant**, Monfort; **Michel Piot**, Rennes, all of France
- [73] Assignee: **Institut National de la Recherche Agronomique**, Paris, France

[21] Appl. No.: **229,062**
 [22] Filed: **Jan. 28, 1981**

[30] **Foreign Application Priority Data**

- Feb. 1, 1980 [FR] France 80 02281
- [51] Int. Cl.³ **A23C 23/00; A23J 3/00; C12P 21/06; C07G 7/00**
- [52] U.S. Cl. **426/42; 424/177; 426/56; 426/657; 426/491; 435/69; 435/272**
- [58] Field of Search **426/34, 42, 56, 657, 426/491, ; 260/112.5 R, 119, 120; 424/177; 435/68, 69, 272**

[56] **References Cited**

U.S. PATENT DOCUMENTS

- 3,970,520 7/1976 Feldman et al. 426/34 X
- 3,974,294 8/1976 Schmille et al. 426/657 X
- 4,172,072 10/1979 Ashmead 435/272

OTHER PUBLICATIONS

Brule et al., Preparation of Native Phosphocaseinate by Combining Membrane Ultrafiltration and Ultracentrifugation, *J. Da. Sci.*, vol. 62, No. 6, 1979, pp. 869-875.
 Chefftel C., Solubilisation Enzymatique Continue Du

Concentre Proteique De Poisson, Essai De Recyclage Des Enzymes, *Ann. Technol. Agric.*, vol. 21, 1972, pp. 423-433.
Chem. Abst., vol. 87: 148285P, No. 19, 7 Nov. 1977, p. 265.
Chem. Abst., vol. 91: 173597g, No. 21, 19 Nov. 1979, p. 523.

Primary Examiner—David M. Naff
Attorney, Agent, or Firm—Oblon, Fisher, Spivak, McClelland & Maier

[57] **ABSTRACT**

Phosphopeptides useful as alimentary products or as medicaments are obtained by a method of subjecting phosphocaseinates of monovalent cations or paracasein derived therefrom to enzymatic hydrolysis with at least one proteolytic enzyme that simulates proteic digestion in vivo in the human body, ultrafiltering the resultant hydrolysate with a membrane that retains the enzyme to obtain a permeate containing phosphopeptides and non-phosphorylated peptides, adding to the permeate a bivalent cation salt to form aggregates of the phosphopeptides, subjecting the resultant solution to ultrafiltration with a membrane that retains the phosphopeptide aggregates, and recovering the retained phosphopeptides. The phosphopeptides form salts, which have dietetic uses, with macroelements such as calcium and/or magnesium and/or oligoelements such as iron and zinc.

9 Claims, 2 Drawing Figures