

United States Patent [19]

Brule et al.

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- [54] **CASEIN PHOSPHOPEPTIDE SALTS**
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- [*] Notice: The portion of the term of this patent subsequent to Nov. 9, 1999 has been disclaimed.
- [21] Appl. No.: **342,701**
- [22] Filed: **Apr. 26, 1989**

Related U.S. Application Data

- [63] Continuation of Ser. No. 227,515, Aug. 2, 1988, abandoned, which is a continuation of Ser. No. 820,840, Jan. 22, 1986, Pat. No. 4,816,398, which is a continuation of Ser. No. 388,931, Jun. 16, 1982, Pat. No. 4,495,176, which is a continuation of Ser. No. 229,062, Jan. 28, 1981, Pat. No. 4,358,465.

[30] Foreign Application Priority Data

- Feb. 1, 1980 [FR] France 80 02281
- [51] Int. Cl.⁵ **A61K 37/16; A23J 1/20; C12P 21/06; C07K 15/24**
- [52] U.S. Cl. **514/7; 426/42; 426/657; 426/491; 435/68.1; 435/272; 514/2; 514/6; 530/352**
- [58] Field of Search **435/272, 68.1; 426/34, 426/42, 657, 491; 424/128, 131, 140, 145, 147, 177, 535; 530/352; 514/2, 6, 7**

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[57] ABSTRACT

Casein phosphopeptide salts of calcium, magnesium or both are produced having less than 4% by weight of aromatic amino acids, greater than 8% and less than 20% by weight serine, less than 3% free amino acid content and a ratio of total calcium, magnesium and phosphorus to total nitrogen greater than 0.2. The phosphopeptides are produced by subjecting a casein material to proteolytic enzyme hydrolysis ultrafiltering the resulting hydrolyzate to produce a permeate containing phosphopeptides, adding a bivalent cation salt to the peptides to form phosphopeptide aggregates and separating by ultrafiltration the phosphopeptide aggregates from non phosphorylated peptides. The phosphopeptides obtained are useful as aliments for dietetic or therapeutic nutrition and as medicines.

6 Claims, 2 Drawing Sheets