

CLAIMS

1. A process for preparing a plant protein containing liquid from a defatted
5 oleaginous plant, characterized in that it comprises the following steps:

a) Forming a suspension of the defatted oleaginous plant in an aqueous solvent;

b) Enzymatically treating the suspension obtained in step a), with the following enzymes:

- at least one protein glutaminase for the solubilisation in said aqueous solvent of
proteins contained in the defatted oleaginous plant,

10 - at least one transglutaminase,

said enzymes being used successively or simultaneously;

c) Recovering the plant protein containing liquid obtained in step b).

2. The process according to claim 1, characterized in that the oleaginous plant is
15 a seed or a fruit from at least one plant selected within the group comprising: peanut,
soybean, rapeseed, sunflower, sesame, neem, cotton, palm, coconut, shea, castor bean,
corn, nuts, almonds, hazelnuts, coconut, pistachios, olives, grapes.

3. The process according to any one of claims 1 and 2, characterized in that the
20 oleaginous plant according to the invention has been defatted so as to contain less than
25% generally from 0.3 to 20 %, more generally from 0.5 to 15 %, still more generally
from 1 to 10% of non-extracted oil (weight % with respect to the total weight of the defatted
oleaginous plant).

25 4. The process according to any one of claims 1 to 3, characterized in that the
oleaginous plant has been crushed before step a) in order to extract its oil.

5. The process according to any one of claims 1 to 4, characterized in that the
defatted oleaginous plant is under the form of a press cake, a flour or a meal.

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6. The process according to any one of claims 1 to 5, characterized in that the
defatted oleaginous plant is a peanut press cake.

7. The process according to any one of claims 1 to 5, characterized in that the defatted plant is soybean flour.

5 8. The process according to any one of claims 1 to 7, characterized in that the defatted oleaginous plant/ protein glutaminase weight ratio is comprised between 50:1 to 2000:1, preferably between 250:1 to 1500:1 and more preferably from 500:1 to 1200:1.

10 9. The process according to any one of claims 1 to 8, characterized in that the enzymatic treatment of step b) is carried out in the presence of at least one glycosidase, preferably an α -amylase, a cellulase, a β -glucanase or a mixture of a cellulase with a β -glucanase.

15 10. The process according to any one of claims 1 to 9, characterized in that defatted oleaginous plant contain at least 20% by weight proteins, preferably from 25 to 60 % proteins, more preferably from 35% to 60% proteins (weight % with respect to the total weight of the defatted oleaginous plant).

20 11. The process according to any one of claims 1 to 10, characterized in that, after step b), an homogenisation step is carried out at high pressure, preferably at a pressure higher than 30 bar, preferably comprised between 100 and 400 bar, more preferably between 130 and 300 bar.

25 12. A plant protein containing liquid, characterized in that it is obtainable according to the process of any one of claims 1 to 11.

30 13. The plant protein containing liquid according to claim 12, characterized in that it comprises from 2 to 6 % protein, from 1 to 6 % fat and from 0.5 to 6% carbohydrate (weight %).

 14. A protein-rich food product, characterized in that it comprises the plant protein containing liquid according to any one of claims 12 or 13, and at least one food acceptable additive.

15. The protein-rich food product according to claim 14, characterized in that the food product is a ready-to-drink beverage.

- 5 16. A plant protein containing liquid characterized in that it comprises from 2 to 6 %, preferably 2 to 4 % protein, from 1 to 6 % fat and from 0.5 to 6% carbohydrate (weight %) and has a particle size distribution (PSD) D90 (volume) below 100 μm , more preferably at 10 to 85 μm , and more preferably at 30 to 80 μm , wherein the PSD is measured by laser diffraction.