

New dry extracts of herbal origin containing essential amino acids

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It is known that athletes and people engaged in heavy and intense muscle work sometimes feel protein hunger. For quick recovery, amniotic preparations of different origins are often used, for example, casein hydrolysate, "Hydrolysine L-103" or peptide compounds [1-3]. Their production is multi-step, the separation process is complicated often requiring aseptic conditions for disinfection and ampoule filling. "Hydrolysine L-103" is obtained from bovine blood's proteins by acid hydrolysis (115-120 °C) using concentrated hydrochloric acid ($d=1.18-1.19 \text{ g/cm}^3$). The process lasts 10-12 hours, and for separation of the target amino acid extract, acid hydrolysate is passed through cation exchange resins and after the desorption subjected to disinfection and ampoule filling.

In the present method, the extracts containing essential amino acids are derived from endemic plants (clovers, narrow-leafed vetches, milk-thorn leaves, groats, etc.); soft parts of the initial materials are crushed, infused with boiling water, and mixed at 90-95 °C for 3 hours. Prepared extract is evaporated, kept in the refrigerator (-5 + 5 °C), the sediment is filtered and passed through TH-3x resin. After desorption, amino-acid technical product is recrystallized from the $\text{H}_2\text{O}/\text{C}_2\text{H}_5\text{OH}$ system. By this method from the mixture of milk-thorn leaves and field clovers a dry amino-acid extract was obtained, containing 18 protein amino acids, including all 7 essential amino acids extremely needed for the human body. For the determination and identification of the amino acid composition of the extract, both thin-layer chromatography and automatic analysis of amino acids were used.

References

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