



Introduction

It is well known, there are 20 kinds of amino acids which comprise the protein of human. According to perspective of nutrition, instead of coming from food, the amino acids which can be synthesized in human body are called non-essential amino acids; the amino acids, which cannot be synthesized in human body or its synthesis speed is much lower than the speed of its consumption, must be supplied by food protein, are called essential amino acids. There are 8 kinds of essential amino acids, whose functions are as follows:

Methionine: comprising hemoglobin, tissue and serum, enhance the physiological functions of the spleen, pancreas and lymph;
Lysine: promotes brain's growth, component of liver and gallbladder, promote fat metabolism;

Tryptophan: promote generation of gastric juice and pancreatic juice;

Phenylalanine: participate in eliminating loss of kidney and bladder function;

Threonine: has the function of transforming some amino acids to their balance;

Isoleucine: Participate in the regulation and metabolism of the thymus, spleen and lower brain glands;

Leucine: balance isoleucine;

Valine: acts on the corpus luteum, breast and ovary.

For patients who are unable to eat normally, chronically malnourished, cachexia, and

critically ill, and cannot take in the essential amino acids for human body like normal people. They need parenteral nutrition to maintain the basic nutritional status of patients, promote wound healing and disease recovery. So amino acid injection was produced. Generally, amino acids injections are classified into balance compound type and therapeutic compound type.

1. Balance compound amino acids: used for supplement of nutrition. Normally are composed of more than 14 amino acids, in which, the ratio of non-essential amino acids to essential amino acids is close to 1. The 18 AA preparations used for supplement of nutrition includes 18AA-I, 18AA-II, 18AA-III and 18AA-IV etc.

2. Therapeutic compound amino acids: used for diseases, whose ratio of non-essential amino acids to essential amino acids is designed according to the characteristics of diseases. Generally, divided into: 9AA; 6AA; 18AA-VIII; Alanyl Glutamine Injection, etc.

Under the condition of sufficient energy supply, amino acid injection is able to enter tissue cells, participate in the synthesis and metabolism of protein, obtain the nitrogen balance, and generate enzymes, hormones, antibodies, structural proteins and other physiologically active substances, which promote tissue healing and restore normal physiology Features.

Amino acid injection contains the essential amino acids for human body. According to requirements, the content of its components can be analyzed by an amino acid analyzer, which can accurately obtain the content of each component and make its due contribution to medicine research and development.

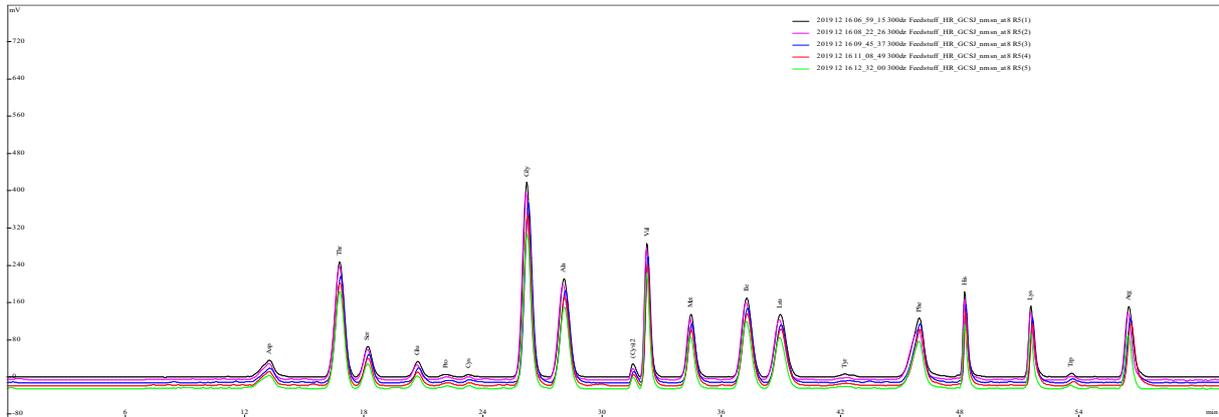


Figure 1: The sample was placed in sample dilution. After the sample was filtered and centrifuged, the free amino acids were separated using a lithium cation exchange column and then derivatized with ninhydrin. The detection was performed at 570 nm. The concentrations of the individual amino acids were determined using a known concentration of a standard amino acid mixture. In Figure 1 five chromatograms of five different samples are shown. A good overlapping of the signals is clearly visible, which indicates a constant quality of the samples among themselves.

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