Other amino acid testing methods for arginine

Other amino acids (amino acid analyzer)

Sample diluent: Take 300ml of water, add 0.7ml of hydrochloric acid, and dilute with water to 1000ml.

Test sample solution: Take an appropriate amount of the test sample, dissolve it in sample diluent and dilute it to prepare a solution containing approximately 3mg of arginine per 1ml.

Self reference solution: Accurately measure 1ml of the test sample solution, place it in a 100ml volumetric flask, dilute to the mark with sample diluent, and shake well. Accurately measure 1ml and place it in a 10ml volumetric flask. Dilute to the mark with sample diluent and shake well.

Proline reference solution: Take an appropriate amount of proline reference solution, weigh it accurately, dissolve it in sample diluent and dilute it to prepare a solution containing approximately 3μg proline per 1ml.

System suitability solution: Take appropriate amounts of isoleucine reference substance and leucine reference substance, accurately weigh them, dissolve and dilute them with sample diluent to prepare a mixed solution containing approximately 3μg of isoleucine and 3μg of leucine per 1ml.

Reference solution: Take appropriate amounts of alanine reference substance, ornithine hydrochloride reference substance, lysine hydrochloride reference substance, and glutamic acid reference substance, accurately weigh them, dissolve and dilute them with sample diluent to prepare a mixed solution containing approximately 6μg of alanine, 6μg of ornithine, 6μg of lysine, and 6μg of glutamic acid per 1ml.

Use a suitable amino acid analyzer for detection.

System suitability requirement: The separation degree of isoleucine and leucine peaks in the system suitability solution chromatogram should not be less than 1.2.

Measurement method: Precisely measure blank (sample diluent), system suitability solution, proline reference solution, reference solution, test solution, and Self reference solution inject them into the amino acid analyzer, and record the chromatogram.

Limit: If there are chromatographic peaks in the test sample spectrum that have the same retention time as the main peaks of the reference solution, the impurity content should be calculated separately using the external standard method. The content of glut

amic acid should not exceed 0.2%, alanine should not exceed 0.2%, ornithine should not exceed 0.2%, and lysine should not exceed 0.2%; Other indole-3-acetic acid positive substances detected at 570nm are calculated based on the peak area of arginine in the control solution, while other indole-3-acetic acid positive substances detected at 440nm are calculated based on the peak area of proline in the proline solution (if the peak values of impurities detected at 570nm and 440nm wavelengths are both greater than 0.05%, the data at 570nm will be reported). Other individual unknown impurities should not exceed 0.2%, and the total amount of impurities should not exceed 0.5%. Impurities below 0.05% can be ignored.