

19 Amino acids and protein comparison analysis using an certified reference materials (CRM)

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Amino acids are involved in a wide variety of biological processes. The amino acid is a compound that has both a basic amino group ($-NH_2$) and the acidic carboxyl group ($-COOH$). Recent, analysis of trace amino acid in physiological have received more attention. Because the analysis of these compounds could provide fundamental and important information for medical, biological, and clinical fields. To determine the linearity of 19 kinds structural amino acids, five different concentration (Approximately 3.125, 6.25, 12.5, 25, 50, 100nM) of standards. The Certificated Reference Material from Korean food nutritional data production system built was used as the test sample to determine the accuracy and reproducibility of the analytical method. Precision and reproducibility of assay value were expressed with %RSD (relative standard deviation), z-score and recovery(%). Results of the analysis, the total amino acid average content is 36.89g/100g(SRM1845a) and 2.56g/100g(SRM3287), the high RSD is 14.6% and the low RSD is 3.1%. The total protein average content is 42.09g/100g(SRM1845a) and 3.34g/100g(SRM3287), the high RSD is 5.6% and the low RSD is 1.1%. The regression analyses revealed good correlations (correlation coefficient (r^2)) that were greater than 0.99. The recovery values of the amino acids were ranged from 85.68 to 106.38%.