ABSTRACT

METHOD FOR SIMULTANEOUSLY DETECTING OXALIC ACID, CITRIC ACID AND CYSTINE IN 24H URINE AND USE THEREOF

The present disclosure discloses a method for simultaneously detecting oxalic acid, citric acid and cystine in 24h urine and use thereof, relating to the technical field of detection. The method comprises the following steps: S1, preparation of a test sample: taking a to-be-detected 24h urine sample, adding oxalic acid-1,2-$^{13}C_2$ as an internal standard of oxalic acid, citric acid-2,2,4,4-d4 as an internal standard of citric acid and L-cystine-d4 as an internal standard of cystine; performing derivation treatment followed by successively adding a tetramethyl ammonium fluoride solution and an acetonitrile solution to be evenly mixed, then injecting the mixed solution onto a weak cation exchange 96-well plate, and collecting eluent as the test sample; and S2, detection: detecting the test sample utilizing a liquid chromatography tandem mass spectrometer. The detection method of the present disclosure is higher in steady degree and more accurate in detection, the polarity of a compound is significantly reduced through derivation reaction, so as to facilitate the separation of a citric acid-isocitric acid isometric isomer. Meanwhile, the derivation method used in the present disclosure is conducted in a water environment, thus the pretreatment process is more convenient so that the reaction is conducted without blow drying, which is conducive to realizing automation in a later period.

No Figure