VALIDATION STUDY OF A HPLC METHOD ABLE TO MEASURE BIOGENIC AMINES IN CHICKEN MEAT

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Abstract

The work describes an internal study for validating the measuring method of the biogenic amines in refrigerated chicken meat by means of the high performance liquid chromatography (HPLC). The evaluated features for validating the measuring method by means of the high performance liquid chromatography are as follows: linearity, precision, accuracy (repeatability and reproductibility), selectivity, sensitivity (detection limit, quantification limit), robustness. The analysed biogenic amines are: tryptamine, phenyl-ethylamine, putrescin (tetramethylene dimine), cadaverine, histamine, serotonin, tyramine, spermidine and spermine. The calibration curves for the biogenic amines are linear and the values of the linearity coefficients (r^2) are greater than 0.996. The average recovery in the concentration levels $0.5 – 2$ µg/ml for the chicken samples recorded the following values: tryptamine 83-85%; phenylethylamine 85-90%; putrescin 94-97%; cadaverine 95-103%; histamine 93-99%; serotonin 88-91%; tyramine 92-93%; spermidine 95-98%; spermine 99-103%. The standard deviation value for inter-laboratory reproducibility evaluation and the precision regarding the chicken meat samples which were artificially contaminated with biogenic amines solutions having a concentration of 1 µg/ml and 2 µg/ml are less than 1.

Keywords: validation, HPLC, biogenic amines, chicken meat.

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