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Analysis of Dabsyl-Cl Derivated Amino Acids by High Performance Liquid Chromatography and Tandem Mass Spectrometry

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A high performance liquid chromatograph coupled with a tandem mass (MS/MS) detector was used for the analysis of 4-dimethylaminoazobenzene-4-sulfonyl chloride (dabsyl-Cl) derivated amino acids. Apart from dabsyl-Cys and dabsyl-Lys, the other 18 common amino acid derivatives had good linear relationship between the responding peak area and concentrations between 10–250 μM , $R^2 > 0.99$. The responding peak area of dabsyl-Lys at a low concentration was suppressed by that of dabsyl-Gln in samples of the amino acid mixture, because signals of both amino acid derivatives were present in the same selected reaction monitoring (SRM) channel. A linear regressional curve of dabsyl-Lys was therefore obtained only in the range of 250–1000 μM , $R^2 > 0.96$. Dabsyl-Cys was destructed to get a unique ion of m/z 290 before entering the MS/MS detector. The regressional curve of the responding peak area and concentration of dabsyl-Cys was therefore obtained with the SRM of m/z 290 to its product ion m/z 225.1. A linear relationship was obtained between 1–10 mM, $R^2 > 0.98$. The established method was used in the analysis of amino acids in a koji liquid. The results showed better identification of the dabsyl-AA and the method is, therefore, more reliable in analyzing amino acid contents in complex food mediums.

Keywords: [amino acid](#), [dabsyl chloride](#), [analysis](#), [HPLC-MS/MS](#), [mass spectrometry](#)



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