Poster #48 This is a key poster for AccQ•Tag. The ability of analyzing amine compounds outside of traditional amino acid analysis is one of the strengths that can truly be of financial benefit to us all. This is a compilation of work done mostly by our customers. The linearity of response, and the ability to detect and quantitate the drug in plasma is unique and powerful. Keep in mind that this is the best reagent for the derivatization of both primary, and secondary amines, be they amino acids or not!

HPLC 1994

-11

Analysis of Amine Compounds Via Derivatization with 6-Aminoquinolyl-n-hydroxysuccinimidyl carbamate

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Derivatization methods for analytical chemistry have long been an important tool for the analysis of reactive species, particularly amines, which may lack easily detected functionalities. We have recently developed a new reagent, 6-Aminoquinolyl-N-hydroxysuccinimidyl carbamate (AQC, Waters AccQ•Fluor™ reagent) for primary and secondary amine analysis that brings simplicity to the derivatization procedure while providing superb linearity, reproducibility and accuracy for amino acid analysis, a key application in biological research and biotechnology (S. A. Cohen and D. P. Michaud, Anal. Biochem, 211, 279-287, 1993). This work will describe the analysis of a number of other target amine analytes which have now also proven amenable to derivatization by AQC, retaining many of the same advantages previously demonstrated for amino acids. Derivatization of peptides allows for ultrasensitive detection below 1nM concentration. Selectivity and sensitivity of fluorescence detection improves the analysis of a number of amine drugs in biological samples. The analysis of biogenic amines such as histamine and spermidine has also been documented. Most samples require little or no sample cleanup, and derivatization can be carried out simply by buffering the sample and adding reagent. Reagent removal is not required and the derivatized samples are injected with no further preparation. Typical detection limits range from 50-500fmol. Typical relative standard deviations for standards are 1-4%, and are 2-7% for samples.

Analysis of enantiomeric amines and amino acids is also enhanced by the quinolyl label, with derivatization providing excellent discrimination for both HPLC and CE separations. High sensitivity detection and no apparent racemization during the derivatization reaction allow for detection of extremely small amounts of one enantiomer in the presence of a large excess of the other. These new applications will be used to illustrate the broad applicability of this significant new derivatization chemistry.