ABSTRACT

TITLE:	Quantification of Acetylation in Histones H3 & H4 Isolated from Human Lung Epithelial Cells
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ABSTRACT: Cigarette smoke is known to contain toxins that increase the expression of inflammation response genes. To begin to address whether increased expression of inflammation response genes is due to increased levels of histone acetylation, we exposed human lung epithelial cells to cigarette smoke extract (CSE) at a final concentration of 200 g/ml for 6 to 24 hours; as a control, a second set of cells were exposed to DMSO. Histones (H2A, H2B, H3 and H4) were extracted from each sample using an already established protocol. Each sample was then divided: One set was acetylated using deuterated acetic anhydride to mark lysine residues that were unacetylated in vivo, and the acetylated samples were then digested with trypsin. The other set remained as whole protein (i.e. was not acetylated with deuterated acetic anhydride nor digested with trypsin). All four samples were sent to the Proteomics & Metabolomics Facility at Colorado State University for mass spectrometric (MS) analysis. Ion trap MS/MS was used to determine the levels of acetylation in specific histone H3 and H4 peptides and MALDI was used to analyze the whole protein samples. The results of these analyses are presented below.