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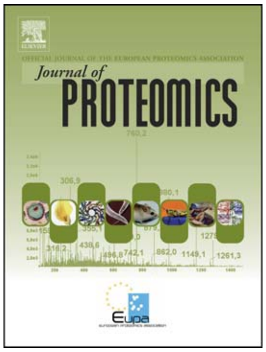

Lysine acetylation and cancer: A proteomics perspective

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PII: S1874-3919(16)30440-7
DOI: doi: 10.1016/j.jprot.2016.10.003
Reference: JPROT 2689

To appear in: *Journal of Proteomics*

Received date: 13 June 2016
Revised date: 7 October 2016
Accepted date: 9 October 2016

Please cite this article as: Gil Jeovanis, Ramírez-Torres Alberto, Encarnación-Guevara Sergio, Lysine acetylation and cancer: A proteomics perspective, *Journal of Proteomics* (2016), doi: 10.1016/j.jprot.2016.10.003

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Title: Lysine acetylation and cancer: a proteomics perspective.

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Running title: Acetyl-proteomics and cancer.

Keywords: Lysine Acetylation, Lysine Acetyltransferases, Lysine Deacetylases, Bromodomains, Cancer, Proteomics, Stoichiometry.

Summary: Lysine acetylation is a reversible modification controlled by two groups of enzymes: lysine acetyltransferases (KATs) and lysine deacetylases (KDACs). Acetylated lysine residues are recognized by bromodomains, a family of evolutionarily conserved domains. The use of high-resolution mass spectrometry-based proteomics, in combination with the enrichment of acetylated peptides through immunoprecipitation with anti-acetyl-lysine antibodies, has expanded the number of acetylated proteins from histones and a few nuclear proteins to more than 2,000 human proteins. Because acetylation targets almost all cellular processes, this modification has been associated with cancer. Several KATs, KDACs and bromodomain-

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