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Nota di contenuto	Introduction to Protein Posttranslational Modifications (PTMs) -- Chemical reporter for Lysine Malonylation -- Identification of Histone Lysine Glutarylation -- Glutarylation at Histone H4 lysine 91 Modulates Chromatin Assembly -- Identification of Sirt3 as an ‘Eraser’ for Histone Lysine Crotonylation Marks using a Chemical Proteomics Approach.
Sommario/riassunto	This book presents pioneering findings on the characterization of cellular regulation and function for three recently identified protein posttranslational modifications (PTMs): lysine malonylation (Kmal), glutarylation (Kglu) and crotonylation (Kcr). It addresses three main topics: (i) Detecting Kmal substrates using a chemical reporter, which provides important information regarding the complex cellular

networks modulated by Kmal; (ii) Identifying Kglu as a new histone PTM and assessing the direct impact of histone Kglu on chromatin structure and dynamics; and (iii) Revealing Sirt3's value as a regulating enzyme for histone Kcr dynamics and gene transcription, which opens new avenues for examining the physiological significance of histone Kcr. Taken together, these studies provide information critical to understanding how these protein PTMs are associated with various human diseases, and to identifying therapeutic targets for the dysregulation of these novel protein markers in various human diseases.