1. Record Nr. UNINA9910373936803321

Titolo	Cullin-RING Ligases and Protein Neddylation : Biology and Therapeutics / / edited by Yi Sun, Wenyi Wei, Jianping Jin
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-1025-3
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VIII, 372 p. 119 illus., 68 illus. in color.)
Collana	Advances in Experimental Medicine and Biology, , 2214-8019 ; ; 1217
Disciplina	572.8
Soggetti	Medicine - Research Biology - Research Post-translational modification Cytology Biomedical Research Post-translational Modifications Cell Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 Introduction of Protein Ubiquitination and Cullin/RING Ubiquitin Ligases: introduce the protein ubiquitination system briefly; discuss the family of Cullin/RING Ubiquitin Ligases -- Chapter 2 Assembly and Regulation of CRL ubiquitin ligases: discuss the assembly process of CRL ubiquitin ligases by CAND1; elaborate the regulation of CRL ubiquitin ligases by neddylation -- Chapter 3 Protein structure of CRL and Neddylation complex -- Chapter 4 The roles of CRL ubiquitin ligases and neddylation in human diseases -- Chapter 5 The roles of CRL ubiquitin ligases in stem cell biology: Briefly introduce concept and potential application of stem cells; analyze a few example for CRL ubiquitin ligases to control stem cell biology -- Chapter 6 The biology of F-box proteins: introduce the history of SCF ubiquitin ligases; discuss the overall functions of F-box proteins (emphasize phospho-degron concept) -- Chapter 7 The roles of Fbxw7 in human diseases: discuss the roles of Fbw7 in cancer; elaborate the roles of Fbxw7 in other diseases -- Chapter 8 Mouse models of CRL1 components to study their biological function -- Chapter 9 Cullin2 and cancer:

introduce Cullin2 ubiquitin ligases; discuss VHL ubiquitin ligase and its roles in cancer -- Chapter 10 Cullin3 and tumorigenesis: introduce Cullin3 ubiquitin ligases; discuss a few examples of Cullin3 ubiquitin ligases in control of tumorigenesis -- Chapter 11 Cullin4-DCAF proteins in tumorigenesis: Discovery of DCAF proteins; discuss a few examples of DCAF's biological functions -- Chapter 12 Cullin4 ubiquitin ligases in DNA damage responses: Introduce Cullin4 ubiquitin ligases; discuss the roles of Cullin4 ubiquitin ligases in DNA damage responses -- Chapter 13 Coordinating the roles of Cullin5 ubiquitin ligases by SAG and UBE2F: introduce Cullin5 ubiquitin ligases; discuss how SGA and UBE2F mediates the functions of Cullin5 -- Chapter 14 Cullin5 in anti-virus infection: mechanism and drug target -- Chapter 15 The roles of Cul7 in cancerbiology: introduce Cullin7 ubiquitin ligase7; discuss a few examples of Cullin7 ubiquitin ligases in cancer -- Chapter 16 Coordinating functions of p97 and CRL ubiquitin ligases in protein turnover: introduce the interactions between p97 and CRL ubiquitin ligases; discuss the coordinating roles between p97 and CRL ubiquitin ligases in protein turnover -- Chapter 17 Interaction between CRL ubiquitin ligases and COP9 Signalosome: introduce Cop9 signalosome; discuss how Cop9 signalosome regulates CRL ubiquitin ligases -- Chapter 18 Drug discovery effort to target Cullin-3 neddylation: discuss inhibitor of Cullin3 neddylation and its application -- Chapter 19 Targeting neddylation modification: Briefly introduce protein neddylation; discuss the roles of neddylation in cancer -- Chapter 20 Targeting CRL ubiquitin ligases: discuss current progress in targeting CRL ubiquitin ligases; discuss the application of CRL ubiquitin ligases in Protac drug development.

Sommario/riassunto

This book summarizes all the important aspects of CRLs (Cullin-RING E3 Ubiquitin Ligases), while providing details of mechanistic specifics that go beyond protein ubiquitination and neddylation. Ubiquitin ligases, including the CRLs, which are activated by neddylation, play an important role in diverse biological processes and are involved in various human diseases, particularly cancer. The book covers various topics, such as CRL structure, biology, genetics, its regulation by neddylation, its pivotal role in human disease, and its potential in drug discovery and targeted therapies. The book appeals to biochemists and biologists working in other fields, and, given the importance of CRLs in all aspects of cell biology and the great promise of targeting these complexes for therapy, is a valuable resource anyone interested in modern biology or medicine.