# DNA Helicases and DNA Motor Proteins [

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ed. lit

Springer New York,
2013

Human genetics | Biochemistry | Cytology | Medicine | Human Genetics | Biochemistry, general | Cell Biology | Biomedicine general

Monografía

In recent years, a number of groundbreaking structural and mechanistic studies deepened our understanding of helicase mechanisms and established new approaches for their analyses. Many fundamental mechanistic questions ranging from the mechanism of force generation, mechanochemical coupling to distinct mechanisms by which the same enzyme translocates on DNA removing obstacles, unwinds DNA and/or remodels nucleoprotein complexes, however, remain to be answered. It is even less understood how the helicase motors are incorporated into a wide range of genome maintenance and repair machines. The field has reached a stage when the studies of molecular mechanisms and basic biology of helicases can and shall be integrated with the studies of development, cancer and longevity. The objective of this book is to provide the first systematic overview of structure, function and regulation of DNA helicases and related molecular motors. By integrating the knowledge obtained through the diverse technical approaches ranging from single-molecule biophysics to cellular and molecular biological studiesthe editorsaim to provide a unified view on how helicases function in the cell, are regulated in response to different cellular stresses and are integrated into large macromolecular assemblies to form a complex and adaptive living system



**Título:** DNA Helicases and DNA Motor Proteins Recurso electrónico] edited by Maria Spies

**Editorial:** New York, NY Springer New York Imprint: Springer 2013

**Editorial:** New York, NY Springer New York 2013

**Descripción física:** XII, 304 p

**Mención de serie:** Advances in Experimental Medicine and Biology 767

**Nota general:** Description based upon print version of record

**Bibliografía:** Includes bibliographical references and index

primase complex as a target for effective herpesvirus antivirals -- RecQ helicases - conserved guardians of genetic integrity -- Roles of DNA helicases in the mediation and rRegulation of homologous recombination -- DNA helicases in NER, BER andMMR -- Roles for helicases as ATP-dependent molecular switches -- The FtsK family of DNA pumps -- ATP dependent chromatin remodelers -- Index

**Lengua:** English

**ISBN:** 9781461450375 9781461450368 9781461450382 9781489998514

**Materia:** Human genetics Biochemistry Cytology Medicine Human Genetics Biochemistry, general Cell Biology Biomedicine general

**Autores:** Spies, Maria, ed. lit

**Enlace a serie principal:** Advances in experimental medicine and biology (CKB)954927588283 (DLC)77000246 (OCoLC)1461189 2214-8019

**Enlace a formato físico adicional:** 1-4899-9851-9 1-4614-5036-5

**Punto acceso adicional serie-Título:** Advances in Experimental Medicine and Biology 767

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