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Nature | 11 March 2009

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Nature | 05 December 2012

5. **Evolutionary genomics: Algae's complex origins**  
Nature | 28 November 2012

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## ARTICLES

### [The NAD-dependent deacetylase SIRT2 is required for programmed ne...](#)

Nisha Narayan, In Hye Lee, Ronen Borenstein, Junhui Sun, Renee Wong + *et al.*

Here it is shown that the NAD-dependent deacetylase SIRT2 is an essential component of necrosis, and that mouse hearts that do not contain SIRT2 or that are treated with a pharmacological inhibitor of SIRT2 are largely protected from ischaemic injury.

See also [News & Views by Zhou & Yuan](#)

### [Bypass of a protein barrier by a replicative DNA helicase](#)

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Hasan Yardimci, Xindan Wang, Anna B. Loveland, Inger Tappin, David Z. Rudner + *et al.*

Single-molecule and ensemble assays are used to show that large T antigen, the replicative DNA helicase of the simian virus 40 (SV40), unwinds DNA as a single hexamer by steric exclusion and is able to bypass covalent DNA-protein crosslinks.

See also [News & Views by Trakselis & Graham](#)

### [Structure of the TatC core of the twin-arginine protein transport system](#)

Sarah E. Rollauer, Michael J. Tarry, James E. Graham, Mari Jääskeläinen, Franziska Jäger + *et al.*

The twin-arginine translocation (Tat) pathway transports folded proteins across membranes in bacteria and plant chloroplasts; the crystal structure of TatC, an integral membrane protein and core component of this complex, is now presented.

### [Automated design of ligands to polypharmacological profiles](#)

Jérémy Besnard, Gian Filippo Ruda, Vincent Setola, Keren Abecassis, Ramona M. Rodriguiz + *et al.*

An automated approach designing drug ligands to multi-target profiles (with a 75% prediction success rate) is experimentally validated by the invention of novel ligands tailored to the complex and physiologically-relevant goal of identifying drugs that can specifically target profiles of multiple proteins.

## LETTERS

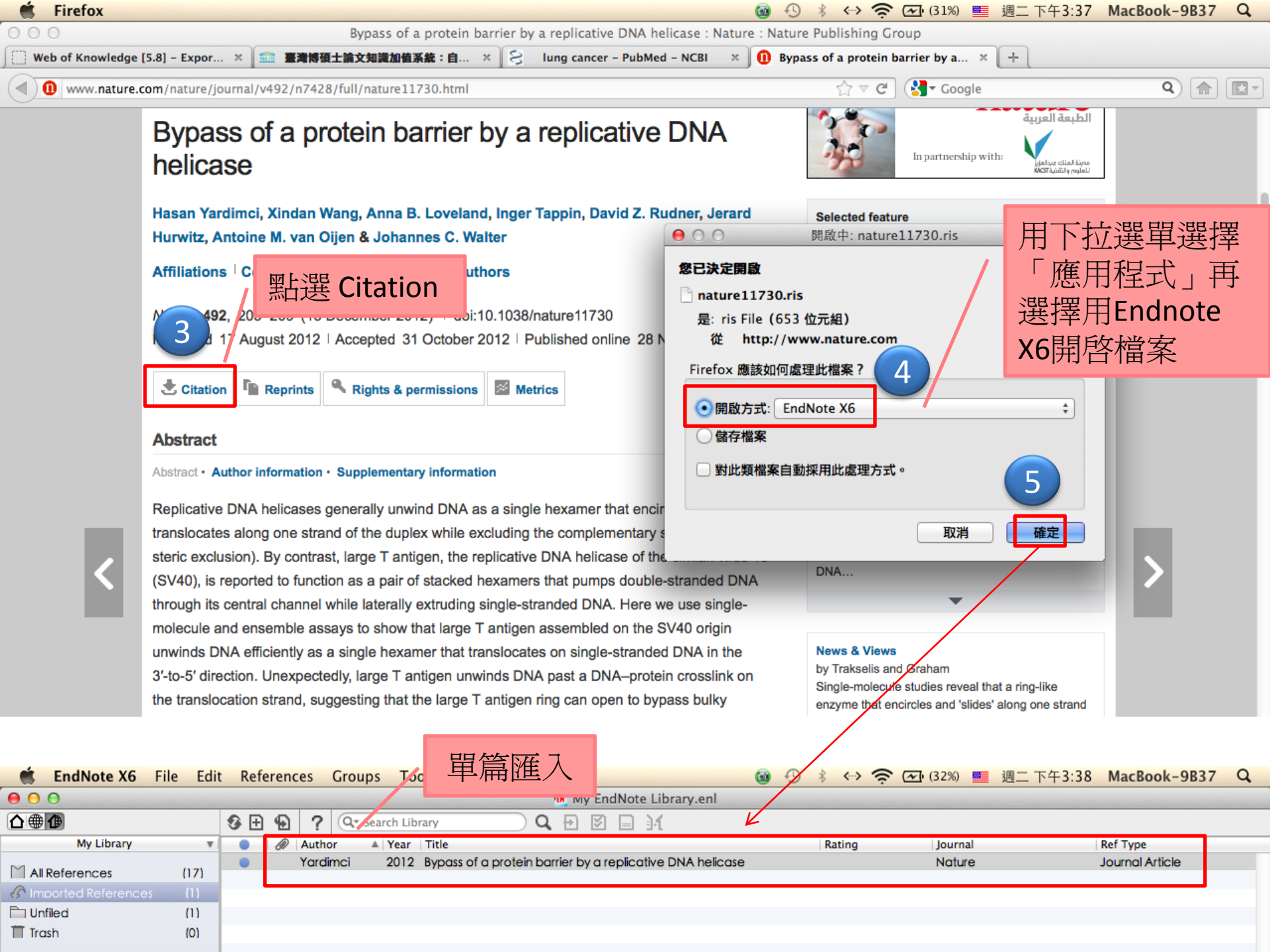
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### [Formation of the widest binary stars from dynamical unfolding of triple systems](#)

Bo Reipurth & Seppo Mikkola

An explanation for the formation of binary systems in which the components are extremely far apart is proposed: triple systems can break up and send one component far away by taking energy from the

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# Bypass of a protein barrier by a replicative DNA helicase

Hasan Yardimci, Kindan Wang, Anna B. Loveland, Inger Tappin, David Z. Rudner, Jerard Hurwitz, Antoine M. van Oijen & Johannes C. Walter

Affiliations | Cite this article | Authors

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## Abstract

Abstract • Author information • Supplementary information

Replicative DNA helicases generally unwind DNA as a single hexamer that encircles DNA and translocates along one strand of the duplex while excluding the complementary strand (by steric exclusion). By contrast, large T antigen, the replicative DNA helicase of the SV40, is reported to function as a pair of stacked hexamers that pumps double-stranded DNA through its central channel while laterally extruding single-stranded DNA. Here we use single-molecule and ensemble assays to show that large T antigen assembled on the SV40 origin unwinds DNA efficiently as a single hexamer that translocates on single-stranded DNA in the 3'-to-5' direction. Unexpectedly, large T antigen unwinds DNA past a DNA-protein crosslink on the translocation strand, suggesting that the large T antigen ring can open to bypass bulky



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Yardimci	2012	Bypass of a protein barrier by a replicative DNA helicase		Nature	Journal Article