

# Molecular Dynamics Simulations of DNA binding by Helicase Hel308

Petra Imhof and Daniel Sebastiani\*

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## Abstract

Helicases separate the two strands of their target DNA so as to produce single stranded DNA. They play a role in many important biological processes such as replication, DNA recombination and repair. Despite the successful structural characterization of helicase proteins, with and without DNA, the mechanism of how they recognize and bind their target DNA is not yet fully understood. We plan to perform Molecular Dynamics Simulations of the helicase protein Hel308 complexed to DNA and in free form in order to gain insight in the dynamics of the protein-DNA interaction. By applying enhanced sampling techniques we aim to model the process of DNA binding by Hel308.

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\*Dr. P. Imhof; Priv.-Doz. Dr. D. Sebastiani, Fachbereich Physik, Freie Universität Berlin, Arnimallee 14, 14195 Berlin; Email: [daniel.sebastiani@fu-berlin.de](mailto:daniel.sebastiani@fu-berlin.de)