

City University of Hong Kong
Department of Biomedical Sciences
presents a seminar



“New Mechanistic Insights into PARP-1-mediated DNA Damage Response”

by

Dr. Chengmin Qian
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The University of Hong Kong

Date: 15 Dec 2016

Time: 11:00am to 12:30pm

Venue: P4704, 4/F, Academic 1, City University of Hong Kong

Abstract

PARP-1 is a major poly(ADP-ribose) transferase that plays an important role in DNA damage repair. PARP-1 has been shown to be a DNA single-strand and double-strand break sensor protein that helps rapidly recruit many downstream DNA repair proteins to damaged DNA sites in a poly(ADP-ribose) dependent manner. In this presentation I will talk about a new mechanism of PARP-1-mediated DNA damage response. We identified and provided the biochemical and structural evidence that PARP-1 interacts with a critical protein called Timeless. We demonstrated that rapid and transient accumulation of Timeless at laser-induced DNA damage sites requires PARP-1 but not poly(ADP-ribosylation) and that Timeless is co-trapped with PARP-1 at DNA lesions upon PARP inhibition. Furthermore, we show that Timeless and PARP-1 interaction is required for efficient homologous recombination repair.

About the Speaker

Dr. Qian's current research is directed at understanding molecular mechanisms of epigenetic modifications at atomic resolution by using protein NMR and X-ray crystallography. His research group is studying chromatin modifying enzymes that establish different epigenetic modifications, and readout proteins that interpret epigenetic modifications. Their ultimate goal is to apply structure-based rational design method to develop small chemical compounds capable of modulating these epigenetic processes under physiological conditions.

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All are welcome