

Tentative Outline
Special Issue for CURRENT PROTEIN & PEPTIDE SCIENCE
Guest Editors: Palmiro Poltronieri and Masanao Miwa

Aims & Scope:

PARP superfamily. Phylogenetic studies. PARP-domain proteins. PARylation. PARylation studies using PARG^{-/-} mutants. Macrodomein-containing proteins (PARP, PARG, histones). Novel insights in domains responsible of protein-protein interactions: roles of WWE and SRT domains. PAR recognition by PBM and PDZ domain. Specificity of zinc finger domains and activation by nucleic acid free ends. Moonlighting protein and molten globule domains. PARPs role in signaling, chromatin regulation and transcription. NAD⁺ and nicotinamide, competition with NAD utilising enzymes, sirtuins and ageing. PARP-1 regulation of intracellular trafficking of key cellular proteins. Differential role of PARP-domain proteins in higher eukaryotes. PARP-domain proteins in plants.

Key words:

DNA repair, Cancer, Ageing, NAD⁺, ADP-ribosylation, Poly(ADP-ribose (PAR), ADP-ribose (ADPR), ADPR hydrolysis, PAR cycling, DNA double strand Breaks (DSB), Homologous Recombination, BRCT domain, DNA polymerase β , DNA ligase, XRCC1, BRCA1, WGR domain, ART domain, UV crosslinking, Nucleotide Excision Repair, XPA, Ets1, DNA protein kinase, Werner helicase, PI3 kinase, AKT, post-translational modifications, ubiquitinylation, SUMOylation.

Subtopics:

-Regulation epigenetic activities. Competition for lysine modification in histone mark establishment, involvement in DNA methylation, transcription regulation, assembling of protein complexes. Ageing. Cancer. Embryogenesis. Induced pluripotent stem cells. Mono-ADP-rybosyl transferases. Macro domains combining PAR anchoring and ADPR hydrolase activity. Reactive Oxygen Species sensing and modulation.

Schedule:

Manuscript submission deadline: February 28, 2015

Peer Review Due: April 30, 2015

Revision Due: May 10, 2015

Notification of acceptance by the Guest Editor: May 12, 2015

Final manuscripts due: May 15, 2015