



BioMed Research International

Special Issue on

Nuclear Lipids in Cell Life: From Health to Disease

CALL FOR PAPERS

Nuclear lipids are vital for cell life. The intranuclear environment is traditionally considered to be a place of interactions among nucleic acids and regulatory proteins for the control of gene expression, DNA replication, and repair. Glycerophospholipids, sphingolipids, glycerolipids, sterol lipids (cholesterol and cholesteryl esters), and free fatty acids represent “minor component” of the nucleus. Lipids are localised in nuclear membrane, nuclear matrix, nucleolus, and chromatin. Nuclear membrane contains the large bulk of nuclear lipids, which provide structural support, regulate membrane fluidity, and are the source of lipid signaling mediators. During cell proliferation the modification of lipid metabolism makes the nuclear membrane more flexible by changing the diameter of nuclear pores and increasing mRNA transport and the nuclear matrix more rigid by relaxation of the superhelix strain and favouring DNA synthesis. The inner nuclear membrane contains lipid microdomains that act as a platform for DNA duplication and RNA transcription process. In the nucleolus and chromatin, lipids are associated with nucleic acids by regulating their function. Lipid second messengers produced in cell nucleus play a pivotal role in multiple signalling networks involved in proliferation, differentiation, degeneration, apoptosis, and cancer.

This special issue aims to provide a picture on recent advances in nuclear lipid research from leading scientists throughout the world which offers important information on understanding their involvement in pathological disorders as well as on the identification of new targets for innovative drug treatments.

We invite authors to contribute original research articles, as well as review articles, that will illustrate new technologies for nuclear lipid detection and analysis, will clarify the implication of nuclear lipids on gene expression, RNA synthesis, import/export of proteins in the nucleus, and specific biochemical events in nuclear signaling pathways, and will demonstrate the role of nuclear lipids in neurodegeneration, aging, cancer, and other diseases.

Potential topics include, but are not limited to:

- ▶ Recent advances in biochemical and microscopy analysis of nuclear lipids such as UFLC MS/MS, microinjection of labelled probes, or others
- ▶ Identification of new enzymes for nuclear lipid metabolism
- ▶ Functional description of new lipid pathways in the nucleus
- ▶ Involvement of nuclear lipids in gene regulation and cancer
- ▶ Role of nuclear lipid in cell proliferation, differentiation, and cell death
- ▶ Importance of nuclear lipids in aging, neurodegenerative disease, and other diseases

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/bmri/cell.biology/nlcl/>.

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