



Hindawi

Stem Cells International

Special Issue on

Epigenetic Regulation Shapes the Stem Cells State

CALL FOR PAPERS

Genetic studies in different model organisms have provided compelling evidence for the importance of chromatin regulators in fundamental developmental transitions, including the formation of the three germ layers in gastrulation as well as during terminal differentiation and regenerative events occurring in postnatal life.

Establishment and maintenance of lineage commitment of stem cells is orchestrated by epigenetic factors, such as histone modifications, regulatory RNAs, chromatin remodeling enzymes, and DNA methylation. These factors act to translate extracellular signals into novel and stable patterns of gene expression. In response to signals from the external niche and/or intracellular signaling pathways, embryonic and adult stem cells engage epigenetic factors in the transition process towards differentiation. This transition is accompanied by global changes in the nuclear organization of the genomic information and a significant remodeling of the epigenome, as depicted by recent genome-wide studies.

In contrast to genetic changes to the DNA sequence, epigenetic modifications are reversible and are, therefore, considered as promising therapeutic targets for the use of stem cells in the treatment of human diseases.

We invite investigators to contribute original research articles as well as review articles addressing the role of epigenetics in regulating cellular processes such as stem cell identity and lineage commitment, reprogramming, and tissue regeneration.

Potential topics include, but are not limited to:

- ▶ Chromatin enzymes and histone modifications involved in the maintenance of pluripotency and differentiation of stem cells
- ▶ Long and short regulatory RNAs as modulators of stem cells identity and differentiation
- ▶ Alterations of nuclear structure and genome architecture during stem cells transitions
- ▶ Role of histone variants and chromatin remodelers in modulating the epigenetic landscape of stem cells
- ▶ Epigenetic factors as therapeutic targets to modulate the stem cells state

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/sci/erss/>.

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Manuscript Due

Friday, 15 May 2015

First Round of Reviews

Friday, 7 August 2015

Publication Date

Friday, 2 October 2015