

Special Issue

Molecular Roadblocks for Cellular Differentiation, Transdifferentiation or Conversion

Message from the Guest Editors

At all stages of life, cells are continuously subjected to the influence of various factors, usually originating from within the close cellular environment or niche.

Maintaining the cell identity can therefore be viewed as an active process counteracting the natural trend to change, and not a passive immovable cellular state. It can be postulated that the regulation of cell fate maintenance is under the influence of molecular roadblocks opposing the intrinsic and extrinsic factors promoting the change. The modulation of these “cell conversion breaks” could prove crucial for treating pathologies characterized by massive cell decay.

Moreover, understanding these molecular roadblocks will also improve the *in vitro* differentiation protocols by uncovering molecular inhibitory signals regulating cell fate switches. This Special Issue in *Genes* on “Molecular Roadblocks for Cellular Differentiation, Transdifferentiation or Conversion” will address the responding mechanisms to instructive signals, with a focus on molecular brakes regulating cell identity, and thus impacting tissue regeneration or cell differentiation, as described in different experimental models.

Guest Editors

Prof. Dr. Simona Chera

1. Department of Clinical Science, University of Bergen, Bergen, Norway
2. Division of Endocrinology, Diabetes, Nutrition, Faculty of Medicine, University of Geneva, 1205 Geneva, Switzerland

Dr. Luiza Ghila

Department of Cell Physiology and Metabolism, Faculty of Medicine, University of Geneva, 1205 Geneva, Switzerland

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Genes is central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fast-moving field. There is a need for good quality, open access journals in this area, and the *Genes* team aims to provide expert manuscript handling, serious peer review, and rapid publication across the whole discipline of genetics. Starting in 2010, the journal is now well established and recognised. Why not consider *Genes* for your next genetics paper?

Editor-in-Chief

Prof. Dr. Selvarangan Ponnazhagan
Experimental Cancer Therapeutics, The University of Alabama at
Birmingham, 1825 University Blvd., SHEL 814, Birmingham, AL 35294-
2182, USA

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