



## Molecular Mechanisms at the Basis of Systemic Complications of Glycogen Metabolism Disorder

Guest Editor:

**Dr. Daniela Melis**

Department of Medicine, Surgery  
and Dentistry, University of  
Salerno, Fisciano, Italy

Deadline for manuscript  
submissions:  
**closed (31 March 2022)**

### Message from the Guest Editor

This Special Issue is focused on molecular mechanisms involved in the pathogenesis of systemic complications of glycogen metabolism disorder. Glycogen storage disease type I (GSDI) is the most frequent form of glycogen metabolism disorder. GSDI is an inborn error of carbohydrate metabolism caused by mutations of either the G6PC gene (GSDIa) or the SLC37A4 gene (GSDIb). Glucose 6-phosphate (G6P) accumulates in endoplasmic reticulum and cytosol in GSD1a and GSD1b, respectively. In GSDIa, the G6P excess in the liver ER has been associated with hyperlipidemia and therefore mitochondrial dysfunction and increasing 11 $\beta$ HSD1 activity. Interestingly, recent studies demonstrated that 11 $\beta$ HSD1 activity is increased in GSDIa and reduced in GSDIb. If hyperlipidemia and increasing 11 $\beta$ HSD1 activity may contribute to the development of insulin resistance and metabolic syndrome (MS) in GSD1a, GSD1b patients appear to be protected.

This Special Issue is going to focus on molecular mechanisms involved in mitochondrial dysfunction, de novo lipogenesis and cortisol production to increase the scientific community's interest in this disease.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Maurizio Battino

Department of  
Odontostomatologic and  
Specialized Clinical Sciences,  
Sez-Biochimica, Faculty of  
Medicine, Università Politecnica  
delle Marche, Via Ranieri 65,  
60100 Ancona, Italy

## Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), PubMed, PMC, MEDLINE, Embase, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Inorganic Chemistry)

## Contact Us

---

*International Journal of Molecular  
Sciences* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/ijms  
ijms@mdpi.com  
X@IJMS\_MDPI