



Functional Mechanism of B-Vitamins and Their Metabolites

Guest Editors:

Dr. Elena Azzini

CREA—Research Centre for Food
and Nutrition, Rome, Italy

Dr. Stefania Ruggeri

Council for Agricultural Research
and Economics, Research Center
for Food and Nutrition, 00178
Rome, Italy

Dr. Angela Polito

CREA—Research Centre for Food
and Nutrition, 00178 Rome, Italy

Deadline for manuscript
submissions:

closed (30 September 2019)

Message from the Guest Editors

The B vitamins include a group of eight water-soluble vitamins crucial for a wide range of several metabolic processes in the body. Most B vitamins are excreted quickly from the body with the only exceptions of vitamin B-12 and folate, which are stored in the liver, but folate deficiency is a highly-prevalent vitamin deficiency throughout the world. The activity of these two vitamins is particularly crucial for cardiovascular, nervous and brain system function. With ageing the prevalence of age-related diseases and disabilities increases.

A B-vitamin metabolite, homocysteine (tHcy) plays a key role in two metabolic pathways: remethylation and transsulfuration. In the remethylation pathway homocysteine is remethylated to methionine, a reaction catalysed by methionine synthase, which uses vitamin B12 as co-factor and 5-methyltetrahydrofolate (5-MTHF) as a methyl donor. This remethylation takes place in most tissues including liver and kidneys. In the transsulfuration pathway, limited to liver and kidneys, homocysteine is irreversibly converted to cystathionine by cystathionine β -synthase, which requires vitamin B6 as a co-factor.





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 & Molecular Biology*) / CiteScore - Q1 (*Inorganic Chemistry*)

Contact Us

*International Journal of Molecular
Sciences* Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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

mdpi.com/journal/ijms
ijms@mdpi.com
X@IJMS_MDPI