



## Physiology and Pathology of Vitamin K Intake

Guest Editors:

### **Dr. Maria Fusaro**

1. National Research Council (CNR)—Institute of Clinical Physiology (IFC), Pisa Via G. Moruzzi 1, 56124 Pisa, PI, Italy  
2. Department of Medicine, University of Padova Italy, Via Giustiniani 2, 35128 Padova, PD, Italy

### **Prof. Dr. Maurizio Gallieni**

1. Department of Biomedical and Clinical Sciences, Università di Milano, 20157 Milano, Italy  
2. Nephrology Unit, ASST Fatebenefratelli Sacco, 20157 Milano, Italy

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### **Message from the Guest Editors**

Vitamin K is characterized by a group of lipophilic vitamins determining post-translational modification of proteins. Vitamin K is mainly known as an agent involved in blood coagulation, maintaining the activity of coagulation factors in the liver, but several additional important functions have been discovered. There are two main forms of vitamin K: vitamin K1 and vitamin K2, both of which act as co-enzymes of  $\gamma$ -glutamyl-carboxylase (GGCX), transforming vitamin K-dependent proteins (VKDPs) from the undercarboxylated into the carboxylated form. Vitamin K stores are limited in humans, but the vitamins can be recycled. Vitamin K1 is principally transported to the liver, regulating the production of coagulation factors. Vitamin K2, instead, also reaches extrahepatic tissues, such as bone and arteries, regulating the activity of Osteocalcin and Matrix Gla-protein (MGP), respectively. Furthermore, vitamin K has been also identified as a ligand of the nuclear steroid and xenobiotic receptor (SXR), expressed in osteoblasts. Another possible role of vitamin K could be protective activity against some cancer types.





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## Editors-in-Chief

### **Prof. Dr. Lluís Serra-Majem**

1. Centro de Investigación Biomédica en Red Fisiopatología de la Obesidad y la Nutrición (CIBEROBN), Institute of Health Carlos III, 28029 Madrid, Spain
2. Research Institute of Biomedical and Health Sciences (IUIBS), University of Las Palmas de Gran Canaria, 35001 Las Palmas, Spain
3. Preventive Medicine Service, Centro Hospitalario Universitario Insular Materno Infantil (CHUIMI), Canarian Health Service, 35016 Las Palmas, Spain

### **Prof. Dr. Maria Luz Fernandez**

Department of Nutritional Sciences, University of Connecticut, Storrs, CT 06269, USA

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*Nutrients* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

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