

## PREFACE

Obesity is recognized as a disease of epidemic proportions worldwide; as a consequence, a strong demand is now put on the development of novel effective therapies for this condition. The current multidimensional treatment of obesity includes lifestyle changes, behavioural and surgical approaches, as well as pharmacological options. The drugs approved for the clinical treatment of obesity are, however, quite few at the moment and not always effective or well tolerated. This situation seems to evolve today, since the discovery, over the last decade, of a wide range of novel biological targets relevant to food intake and energy metabolism and to obesity has stimulated a great research effort in this field. For these reasons, several promising molecules are now under evaluation at different experimental levels by numerous public and private research centers.

This Hot Topic issue of Mini-Reviews in Medicinal Chemistry has therefore been focused on novel approaches to the drug therapy of obesity and collects six updated reviews from experts involved in the development of this field.

The first article, by Chaput *et al.*, is a critical review of the use of two drugs, sibutramine and orlistat, currently available to the clinics. The following articles of the issue will then cover in detail the families of molecules proposed and studied to target specific biological systems involved in the development and maintenance of the state of obesity. The contribution by Dozio *et al.* reviews the hypothalamic neuropeptide systems involved in the control of food intake and energy metabolism, such as the neuropeptide Y and the melanocortin systems, and the agonist and antagonist molecules developed to specifically modulate these targets, acting as anti-obesity drugs. The mini-review by Cervino *et al.* reports the state-of-the-art of cannabinoid receptor antagonists and their promising use in the treatment of obesity and the metabolic syndrome. The molecular biology of leptin, one of the most studied adipokines, is reviewed by Correia within the perspective of the potential therapeutic actions of recombinant leptin and leptin-related compounds, whereas other adipokines and adipocyte targets, useful for the future management of obesity and the metabolic syndrome, is the area reviewed by Kralisch *et al.*. Ghrelin and other gastrointestinal peptides involved in the control of food intake, another important field of research in the pharmacology of obesity, is the topic covered by Tassone *et al.*.

Obesity is known to arise from the combination of environmental and genetic factors, like many highly prevalent chronic degenerative diseases. Thus, together with lifestyle changes, a future pharmacological approach will need to combine novel safe and effective drugs, several of which are reported or envisioned in this issue, together with the study of the specific genetic/genomic pattern of each individual obese subject, in the logic of pharmacogenomics.

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Prof. Paolo Magni, MD-PhD  
University of Milan  
Milan  
ITALY