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Welcome to new insights into 'Metabolic Syndrome'

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The increasing worldwide prevalence of metabolic syndrome represents an important healthcare issue across the world. Metabolic syndrome is most frequently defined by a presence of certain traits, including abdominal obesity, insulin resistance, dyslipidaemia, elevated blood pressure and pro-thrombotic and pro-inflammatory states. It is rather difficult to develop universally effective drugs that act on single targets within the complex pathological network. A more feasible approach might be to manage multiple elements of the pathomechanism and/or to eliminate or minimize risk factors.

In this issue

In this thematic issue we are delighted to feature contributions from respected researchers in the field, covering highlights of new achievements related to the development of new therapies for metabolic syndrome and its important disease components.

Russell explores the growing potential of adipokines as new targets for therapy, particularly as more light is shed on the role of different depots of fat. Chaput and Tremblay discuss the important relationship between obesity incidence and psychological conditions.

It is well known that inhibitors of semicarbazide-sensitive amine oxidase/vascular adhesion protein-1 (SSAO/VAP-1) enzyme may behave as anti-inflammatory agents. In their research article, Carpené and colleagues report that SSAO/VAP-1 substrates, through interaction with the enzyme, may exert valuable short-, mid- and long-term effects on insulin in fat cells, suggesting that SSAO could be considered a relevant target for diabetes treatment.

DiStefano *et al.* outline their findings that two compounds claimed to be activators of the enzyme sirtuin (SIRT1), a deacetylase involved

in metabolic control, in fact exhibit histone acetyltransferase inhibitory activity. Their structural properties led possibly to false-positive results in fluorometric determination.

Miller and Wacker provide a perspective on the design and development of the well-known receptor, 5-HT_{2C}. Its agonists have for some time been considered potential drugs for the treatment of obesity. However, the often significant effects of such agents that have been observed on off-target GPCRs and cardiovascular ion channels have limited their therapeutic applicability. Lorcaserin is the only selective agonist that has completed Phase III trials. Its properties have been carefully analyzed so as to guide future research.

Braud *et al.* discuss a new approach for the treatment of obesity, which that instead of focusing on obesity-associated genes, targets a specific intestinal enteropeptidase. This serine protease is involved in the digestion of dietary proteins and lipids leading to a lean phenotype, while avoiding untoward consequences of non-specificity.

Pessin *et al.* discuss the LKB1/AMPK pathway as a possible target for the treatment of metabolic disorders. The structural and functional properties of the enzymes and their role in metabolic pathways are also considered.

Metabolic disorders represent an unmet medical need with high impact on healthcare budgets. The valuable contributions to this thematic issue provide the reader with insights into current research activity in the field, while highlighting some of the numerous challenges of developing new drug therapies.

We invite all readers to enjoy this thematic issue!

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