Perspectives on rational drug design and therapy for pediatric precision medicine

Aims & Scope:
Current Medicinal Chemistry covers all the latest and outstanding developments in medicinal chemistry and rational drug design. Each issue contains a series of timely in-depth reviews and guest edited thematic issues written by leaders in the field covering a range of the current topics in medicinal chemistry. Current Medicinal Chemistry is an essential journal for every medicinal chemist who wishes to be kept informed and up-to-date with the latest and most important developments.

Abstract:
The pharmacological therapy of pediatric diseases is changing very quickly in the last decades. In this respect, chronic autoimmune and inflammatory diseases are becoming a major issue for pediatricians. In spite of the availability of new biological drugs, which has assisted great improvement in the prognosis and quality of life of many patients, new therapeutic tools are urgently needed to limit adverse effects. This special issue will discuss innovative approaches for rational drug design and therapy personalization in the pediatric population, potentially leading to precision medicine improving efficacy and reducing adverse effects of therapy, that are particularly significant in chronic diseases. The repositioning of old drugs to treat rare pediatric immune diseases will be discussed, such as lopaloquistal for Mevalonate Kinase Disease and antimalarials in interferonopathies. Also, severe oncological pediatric diseases could benefit from precision drugs such as kinase inhibitors targeting specific genetic alterations. Innovative disease models are needed to improve drug design and innovative therapies, and, In this regard, the promising application of pluripotent induced stem cells will be presented. Finally, pharmacokinetics and pharmacogenomics based on innovative molecular markers such as transcriptomics, and their application to therapy personalization and drug discovery for pediatric inflammatory bowel disease will be discussed.

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