Dokumenttyp: journal article

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Titel des Beitrags: Polymorphic variants of adrenoceptors: pharmacology, physiology, and role in disease.

Abstract: The human genome encodes nine different adrenoceptor genes. These are grouped into three families, namely, the ?1-, ?2-, and ?3-adrenoceptors, with three family members each. Adrenoceptors are expressed by most cell types of the human body and are primary targets of the catecholamines epinephrine and norepinephrine that are released from the sympathetic nervous system during its activation. Upon catecholamine binding, adrenoceptors change conformation, couple to and activate G proteins, and thereby initiate various intracellular signaling cascades. As the primary receivers and transducers of sympathetic activation, adrenoceptors have a central role in human physiology and disease and are important targets for widely used drugs. All nine adrenoceptor subtypes display substantial genetic variation, both in their coding sequence as well as in adjacent regions. Despite the fact that some of the adrenoceptor variants range among the most frequently studied genetic variants assessed in pharmacogenetics to date, their functional relevance remains ill defined in many cases. A substantial fraction of the associations reported from early candidate gene approaches have not subsequently been confirmed in different cohorts or in genome-wide association studies, which have increasingly been conducted in recent years. This review aims to provide a comprehensive overview of all adrenoceptor variants that have reproducibly been detected.
in the larger genome sequencing efforts. We evaluate these variants with respect to the modulation of receptor function and expression and discuss their role in physiology and disease.

Zeitschriftentitel / Abkürzung:
Pharmacol Rev

Jahr:
2014

Band:
66

Heft / Issue:
3

Seiten:
598-637

Sprache:
eng

Pubmed:

Print-ISSN:
0031-6997

TUM Einrichtung:
Institut für Pharmakologie und Toxikologie

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Institut für Pharmakologie und Toxikologie > 2014

entries: