

In silico screening and experimental validation of new drug targets for the treatment of co-morbid multifactorial diseases.

Initiative: Trilaterale Partnerschaften – Kooperationsvorhaben zwischen Wissenschaftler(inne)n aus der

Ukraine, Russland und Deutschland

Bewilligung: 14.02.2016

Laufzeit: 2 Jahre

Projekt-Website: <https://www.techfak.uni-bielefeld.de/ags/bi/>

The project aims to discover new drug targets for co-morbid diseases in humans using such frequently co-morbid pathologies as asthma and hypertension. A computer search will be carried out to fulfil the target. For genes for potential drug targets identified insilico, the probability of the effect of promoter single nucleotide polymorphisms (SNPs) on the efficiency of transcription factor binding will be estimated. The SNPs with highest possible functional effect will be further explored for their association with asthma, hypertension, and a combination of the diseases. To identify pathogenetic significance of regulatory variants of the studied genes, an assessment of their impact on the level of expression of different categories of patients will be carried out. A rodent model of asthma and hypertension co-morbidity will be established and the common genes for asthma and hypertension will be investigated to reveal their pathophysiological impact on the development of the diseases. RNA-interference and other approaches will be used to reveal potential therapeutic relevance of common genes. Overall, the study will examine molecular features of common co-morbidity of asthma and hypertension and will also identify potential drug targets for the treatment of these conditions.

Projektbeteiligte

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Novel candidate genes important for asthma and hypertension comorbidity revealed from associative gene networks.

Comorbidity of asthma and hypertension may be mediated by shared genetic dysregulation and drug side effects