WWTF Project LS05-021

Mg2 channel proteins: Structure/function analysis and potential drug targets

Abstract

The eukaryotic Mrs2 and Alr1 proteins and their distant relative CorA in bacteria constitute a novel, highly diverse superfamily of Mg2+ transport proteins. They form homo-oligomeric channels with high cation selectivity.

Here we intend to perform structure/function analyses of the eukaryotic channel proteins Mrs2p and Alr1p in order to better understand their potential role as drug targets. These studies will include
i) mutational, biochemical and structural analyses,
ii) cation flux studies by use of single channel patch-clamping,
iii) the use of Alr1p, the plasma membrane Mg2+ channel protein of lower eukaryotes, as a drug target.
Detailed knowledge resulting from these combined studies is expected to enable us to find inhibitors of Mg2+ flux with a biomedical potential and to understand their action in molecular terms.

Keywords:
ion channel, drug target, magnesium, fungi

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Further links about the involved persons and regarding the project you can find at
https://archiv.wwtf.at/programmes/life_sciences/LS05-021