

Opening a channel for salt retention

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A research team has developed the first small molecule that can reversibly activate a key protein involved in balancing sodium levels, paving the way for drugs that can treat low blood pressure and related conditions.

The human epithelial sodium channel (ENaC) controls sodium flow across many tissues such as the lungs, kidneys, and colon, and it is vital to maintaining proper salt balance and blood pressure. Interestingly, while there are available drugs that can block over-active sodium channels, which can help treat hypertension and other disorders, no one has yet found effective ENaC activators.

Now, Bryan Moyer and colleagues managed to identify one, called S3969. In studies with both amphibian and human cells, this molecule could increase sodium flow through normal ENaC and restore function to deficient ENaC.

The sustained yet reversible action of S3969 makes it a good model to build future drugs aimed at improving hypotension, neonatal pulmonary edema (reduced sodium uptake in the lungs can lead to fluid retention), and renal salt wasting disorders.

Source: American Society for Biochemistry and Molecular Biology

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