

Diverse Transport Modes by the Solute Carrier 26 Family of Anion Transporters

Shmuel Muallem

*Department of Physiology, University of Texas Southwestern Medical Center at Dallas,
Dallas, TX*

The SLC26 family of anion transporters displays diverse substrate specificity. Several members are ubiquitous, while others show limited tissue distribution. The SLC26 transporters are expressed in many epithelia and to the extent known, play a central role in anion secretion and absorption. Most members of the family mediate Cl⁻ transporters, although some members transport mainly SO₄²⁻, Cl⁻, HCO₃⁻, I⁻, and organic anions, like oxalate and formate. A defining feature of the family is their functional diversity. Slc26a1 and Slc26a2 function as specific SO₄²⁻ transporters, while SLC26A4 functions as an electroneutral Cl⁻/I⁻/HCO₃⁻ exchanger. SLC26A3 and Slc26a6 function as coupled electrogenic Cl⁻/HCO₃⁻ exchangers or as *bona fide* anion channels. SLC26A7 and SLC26A9 function exclusively as Cl⁻ channels. Regulation of transporters' activity is not well understood. However, two forms of regulation described for these transporters are activation by CFTR and, perhaps, inhibition by the WNK kinases. Several aspects of transporters' function and regulation will be discussed.