SNQ2 encodes a plasma membrane multidrug transporter that is involved in the pleiotropic drug response. Snq2p efflux pump activity is ATP-dependentand mediates resistance to many xenobiotic compounds including mutagens, fungicides, steroids, and anticancer drugs. Null mutations of snq2 are not lethal but do confer a drug- and salt-hypersensitive phenotype. In addition to drug response, Snq2p is also involved in cation resistanceand in quorum sensing for yeast populations growing in liquid culture. SNQ2 basal levels of expression are positively regulated by Pdr1p, Pdr3p, and Stb5p, through the binding of these transcription factors to pleiotropic drug response elementspresent in the SNQ2 promoter. SNQ2 expression is also drug-induced by Yrr1pand heat-shock-induced by the AP-1 transcription factors Yap1p and Cad1p. Snq2p is a member of the ATP-binding cassettefamily of proteins, a large group that are conserved from bacteria to humans. Overexpression of the human ABC transporter ABCB1/MDR1is a factor in tumor resistance to drug therapy, and deficient ABC transporter function has been implicated in other human diseases as well. S. cerevisiae ABC proteins are often used as a model to study the clinical problem of drug resistance in infectious disease and cancer as well as in pharmaceutical screens for novel drugs.