CCH1 encodes a high-affinity calcium channel with homology to mammalian voltage-gated calcium channels. Based on mutant evidence and coimmunoprecipiation data, Cch1p is thought to function together with the stretch-activated cation channel Mid1p to form a channel for Ca2+ influx at the plasma membrane. Along with the transporters Pmr1p, Pmc1p and the vacuolar ion exchanger Vcx1p, Cch1p and Mid1p help regulate cellular calcium levels and mediate calcium signaling.Ca2+ influx is stimulated by pheromone treatment, hypertonic stress, ER stress including accumulation of misfolded proteins in the ER, the antiarrhythmic and fungicidal drug amiodarone, alkaline stress, and iron stress. Null mutations in CCH1 or MID1 cause hypersensitivity to these conditions, and result in an inability to recover from long-term treatment with alpha factor pheromone.CCH1 homologs have been described in Cryptococcusand in plantsas well as in mammals. Mutations in the human homolog CACNA1A are associated with spinocerebellar ataxia 6, familial hemiplegic migraine, and episodic ataxia-2.