The first step in the mating pathway is the binding of mating pheromone to its receptor; the pheromone receptors are encoded by STE2 in MATa cells and STE3 in MATalpha cells. Both Ste2p and Ste3p are seven transmembrane domain G-protein coupled receptors that transmit their signals through a heterotrimeric G protein. After binding alpha factor, Ste2p undergoes a conformational change, the associated G-alpha subunitexchanges GDP for GTP, and the beta-gammacomplex is then released, activating downstream components of the pheromone response pathway. The endocytosis and subsequent degradation of Ste2p has been successfully used as a system to better understand these general processes in yeast. Endocytosis of Ste2p is not important for the pheromone response itself but is instead involved in the recovery from the pheromone signal. Some ubiquitinated Ste2p exists in the absence of alpha factor, and Ste2p is constitutively endocytosed and degraded in the vacuole; however, the Ste2-pheromone complex is hyperphosphorylated and endocytosed more rapidly.