Amyotrophic lateral sclerosis (ALS) is an adult-onset neurodegenerative disease caused by motor neuron cell death in the brain and spinal cord in the majority of ALS cases. Phosphorylated TAR DNA-Binding Protein 43 (TDP43) accumulates in affected motor neurons. However, less than 5% of ALS cases are caused by mutations in TDP43. Here, we are screening mutations in other ALS genes for evidence of TDP43 phosphorylation and aggregation in vitro. Each mutation was transiently transfected in HEKS293 cells and samples were immunoblotted for phosphorylated TDP43. VAPB mutants did not cause increased TDP43 aggregation in vitro, so this may not be the primary mechanism of disease in VAPB-associated ALS. Phosphorylated TDP43 was found in CHMP2B mutants R22Q, I29V, E45K, N54T, R69Q, T83I, T104N, and S149L. Mutations in CHMP2B, especially those in coiled-coil domains, may cause ALS through impaired autophagy. These positive hits will be investigated further to elucidate mechanisms underlying TDP43 aggregation in disease.