

1 Impaired DNA Repair
TDP-43 FUS
CFAP410 NEK1

2 Nucleo-Cytoplasmic Transport defect
C9ORF72 GLE1

3 RNA dysregulation
SOD1 TDP-43
FUS C9ORF72
ANG ATXN2
ELP3 HNRNPA1
HNRNPA2B1 MATR3
OPTN SETX
TAF15 UBQLN2

4 ER Stress and Impaired Protein Homeostasis
SOD1 TDP-43
FUS ATXN2
UBQLN2 SQSTM1
OPTN PIKFYVE
VAPB VCP

12 Oligodendrocyte (CNS) and Schwann Cell (PNS) Defects
MCT1

10 Vesicle Transport Dysregulation
SOD1 ALS2
FIG4 VAPB
OPTN UNC13A
CHMP2B

5 Mitochondrial Dysfunction and Oxidative Stress
SOD1 TDP-43
C9ORF72 OPTN

6 Stress Granules
SOD1 C9ORF72
TDP-43 FUS
ANG G3BP1
SETX TIA1

7 Pump and Ion Channel Dysfunction
KCNB2 KCNS3

8 Impaired Glutamate Uptake and Excitotoxicity
EAAT2

9 Cytoskeletal Defects and Axonal Transport Dysfunction
DCTN1 NEFH
PFN1 TUBA4A

11 Microglia Activation & Release of Inflammatory Cytokines
SOD1 C9ORF72
TREM2

