

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: X-chromosome-associated *EP* lines used for a retinal degeneration screen in YARS1^{E196K} *Drosophila* model.

File Name: Supplementary Data 2

Description: Table of mass-spectrometry data in FLAG-YARS1WT expressing HEK293 cells.

File Name: Supplementary Movie 1

Description: TIRF movies of unanchored actin filaments in the presence of YARS1 proteins.

File Name: Supplementary Movie 2

Description: YARS1^{WT} and F-actin at protrusions in HeLa cells.