

Description of Additional Supplementary Files

File Name: Supplementary Data 1

Description: RNA deep sequencing results of multicilia purified respectively from Ctrl-i- and Fmr-i1-treated mEPC

File Name: Supplementary Movie 1

Description: Multicilia degeneration of Fmr-i1-treated mEPCs (related to Fig. 5f). mEPCs were treated and live imaged as described in Figure 5e. z-stack images of representative cells at each time point were 2D projected and assembled into a time-lapse movie playing back at 12 frames per sec (fps). Time stamps are in the format of hours: minutes. Centrin1-GFP and siR-tub labeled basal bodies and ciliary axonemes, respectively. Representative frames are shown in Figure 5f.

File Name: Supplementary Movie 2

Description: Distribution of punctate PLA fluorescent signals (red) of puromycylated -tubulin peptides along multicilia (blue) (related to Figure 8c). Day-10 mEPCs were subjected to PLA with anti- α -tubF and anti-Puro antibodies and imaged at 0.5- μ m intervals. Hydin (blue) served as ciliary marker. The ciliary region of a representative cell was 3D-reconstructed by using Imaris (Bitplane). 2D-projected images of the same cell is also shown in Figure 8c.