

1 Description of Additional Supplementary Files

2
3 **File name:** Supplementary Data 1

4 **Description:** Differential RNA expression between retina with Msi1/Msi2 double knockout in photoreceptor
5 cells and floxed controls. Column "Msi1 3'-UTR eCLIP" indicates that eCLIP peak is detected in the 3'-UTR
6

7 **File name:** Supplementary Data 2

8 **Description:** rMATS turbo output for cassette exons.
9

10 **File name:** Supplementary Data 3

11 **Description:** Non redundant set of cassette exons downregulated in the Msi1/Msi2 double knockout
12 compared to floxed controls.
13

14 **File name:** Supplementary Data 4

15 **Description:** Non redundant set of cassette exons upregulated in the Msi1/Msi2 double knockout compared
16 to floxed controls.
17

18 **File name:** Supplementary Data 5

19 **Description:** Differential protein expression between Msi1/Msi2 double knockout retina and floxed controls.
20

21 **File name:** Supplementary Data 6

22 **Description:** Gene Ontology and KEGG pathway enrichment analysis of proteins differentially expressed in
23 photoreceptor double knockouts of Msi1 and Msi2 compared to floxed controls.
24

25 **File name:** Supplementary Data 7

26 **Description:** Gene Ontology and KEGG pathway enrichment analysis of proteins differentially expressed in
27 photoreceptor double knockouts of Msi1 and Msi2 compared to floxed controls.
28

29 **File name:** Supplementary Data 8

30 **Description:** Proteomics and RNA-Seq data related to Figure 8. Column "Msi1 3'-UTR eCLIP" indicates that
31 eCLIP peak is detected in the 3'-UTR.
32

33 **File name:** Supplementary Data 9

34 **Description:** Primers and probes used in this work.
35

36 **File name:** Supplementary Data 10

37 **Description:** Guide RNA sequences for generating photoreceptor specific exon knockouts
38

39 **File name:** Supplementary Data 11

40 **Description:** Antibodies used in this work.
41

42 **File name:** Supplementary Data 12

43 **Description:** Alternative exons used in metaexon analysis that are downregulated in the Msi1/Msi2 double
44 knockout (upregulated by Musashi)
45

46 **File name:** Supplementary Data 13

47 **Description:** Alternative exons used in metaexon analysis that are upregulated in the Msi1/Msi2 double
48 knockout (downregulated by Musashi)
49
50

51 **File name:** Supplementary Data 14
52 **Description:** Alternative exons used in metaexon analysis that remain unchanged in the Msi1/Msi2 double
53 knockout
54
55 **File name:** Supplementary Data 15
56 **Description:** Data related to Figures 2, 4 and 8, and Supplementary Figures 2, 4 and 6
57
58 **File name:** Supplementary Data 16
59 **Description:** ERG data used in preparing Figure 6B. Scotopic (rod) and photopic (cone) A-wave recordings.
60
61 **File name:** Supplementary Data 17
62 **Description:** Peptide log₂ signal intensities.
63
64 **File name:** Supplementary Data 18
65 **Description:** Normalized protein expression. Includes data used in the preparation of Figure 7.
66
67 **File name:** Supplementary Data 19
68 **Description:** BED files with MSI1 eCLIP cross-link sites and regions enriched over input.