**Supplementary file 1.** (A) Cone numbers in different retinal areas along the dorsoventral axis in pigmented and albino mouse. Three images/area (dorsal, medial and ventral) from four retinas/strain. Different cone type quantifications are shown as average ± SD, corresponding to the percentages shown in Fig 1C. The total number of cones analyzed per location and strain are shown in the last column. Total number of cones (B) or S-cone Bipolar cells (SCBCs, C) in eight retinas/mouse strain or line (average ± SD, see also Figure 2B). Significant differences between strains *p*<0.05 (\*), *p*<0.01 (\*\*), *p*<0.001 (\*\*\*), *p*<0.0001 (\*\*\*\*).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A. Cones per retinal area | | | | | | | | | | | |
| Retinal location | | Strain | | **M+S+** | | **M+S-** | | **S+M-** | | ***Total # of* cones** | |
| Dorsal | | Pigmented | | 6.3 ± 10.5 | | 205 ± 32.4 | | 2.8 ± 1.9 | | 2,568 | |
| Albino | | 189 ± 27.5\*\*\*\* | | 14.8 ± 5.7\*\*\*\* | | 2.5 ± 0.9 | | 2,472 | |
| Medial | | Pigmented | | 274 ± 53.7 | | 0.1 ± 0.3 | | 20.2 ± 6.7 | | 3,208 | |
| Albino | | 213 ± 14.2\* | | 0.9 ± 2.6 | | 14.2 ± 7.8 | | 2,731 | |
| Ventral | | Pigmented | | 196.1 ± 26.2 | | 0 ± 0 | | 96.1 ± 14.6 | | 3,506 | |
| Albino | | 195.8 ± 18 | | 0 ± 0 | | 79.8 ± 13\*\* | | 3,307 | |
| B. Total number of cone-type population | | | | | | | | | | | |
| Strain | **All** | | M+ | | S+ | | **M+S+** | | **M+S-** | | **S+M-** |
| Pigmented | 174,826± 6,647 | | 154,617  ± 5,801 | | 109,569  ± 4,654 | | 94,926  ± 4,526 | | 63,992  ± 4,823 | | 18,608  ± 1,989 |
| Albino | 144,914\*\*\*  ± 4,354 | | 129,586\*\*\*  ± 4,379 | | 135,682\*\*\*  ± 5,137 | | 122,063\*\*\*  ± 7,669 | | 4,132\*\*\*  ± 932 | | 14,366\*\*\*  ± 625 |
| C. Total number of Venus+S-cone Bipolar cells | | | | | | | | | | | |
| Line | **Venus+SCBCs** | | | | | | | | | | |
| Cpne9-Venus | 11,100 ± 903 | | | | | | | | | | |