

| Weeks BV | Region | GluN1 | GluN2A | GluN2B | GABA <sub>A</sub> α1 | GABA <sub>A</sub> α3 | GluA2 | Synapsin |
|----------|--------|-------|--------|--------|----------------------|----------------------|-------|----------|
| 2        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 3        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 4        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 5        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 15                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 6        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 8        | C      | 6     | 6      | 6      | 6                    | 6                    | 6     | 6        |
|          | P      | 22    | 19     | 22     | 22                   | 22                   | 22    | 22       |
|          | M      | 2     | 2      | 2      | 2                    | 2                    | 2     | 2        |
| 12       | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 13    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 16       | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 32       | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| SUM      |        | 222   | 219    | 222    | 221                  | 222                  | 219   | 222      |

**Table 2-1. The number of Western blot measurements for each cortical region in Normal animals.** Rows summarize the number of runs from the Central (C), Peripheral (P), and Monocular (M) regions of V1 within each age of animal studied. The columns list each of the 7 proteins analyzed using Western blotting. Column sums detail the number of runs across ages and cortical areas.

| Weeks MD | Region | GluN1 | GluN2A | GluN2B | GABA <sub>A</sub> α1 | GABA <sub>A</sub> α3 | GluA2 | Synapsin |
|----------|--------|-------|--------|--------|----------------------|----------------------|-------|----------|
| 4        | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 11    | 16       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 2     | 4        |
| 5        | C      | 6     | 6      | 6      | 6                    | 6                    | 6     | 4        |
|          | P      | 18    | 18     | 18     | 18                   | 18                   | 18    | 11       |
|          | M      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
| 6        | C      | 8     | 8      | 8      | 8                    | 8                    | 8     | 8        |
|          | P      | 32    | 32     | 32     | 32                   | 32                   | 32    | 32       |
|          | M      | 6     | 6      | 6      | 6                    | 6                    | 6     | 6        |
| 9        | C      | 8     | 8      | 8      | 8                    | 8                    | 8     | 8        |
|          | P      | 36    | 36     | 34     | 34                   | 36                   | 36    | 31       |
|          | M      | 8     | 8      | 8      | 6                    | 8                    | 8     | 6        |
| 32       | C      | 4     | 4      | 4      | 4                    | 4                    | 4     | 4        |
|          | P      | 16    | 16     | 16     | 16                   | 16                   | 16    | 16       |
|          | M      | 2     | 2      | 2      | 2                    | 2                    | 2     | 2        |
| SUM      |        | 172   | 172    | 170    | 168                  | 172                  | 165   | 156      |

**Table 2-2. The number of Western blot measurements for each cortical region in MD animals.** Rows summarize the number of runs from the Central (C), Peripheral (P), and Monocular (M) regions of V1 within each age of animal studied. The columns list each of the 7 proteins analyzed using Western blotting. Column sums detail the number of runs across ages and cortical areas.

|                      | Central       |         |              |         |                      |                                    | Peripheral    |         |              |         |                      |                                 | Monocular     |         |              |         |                      |  |
|----------------------|---------------|---------|--------------|---------|----------------------|------------------------------------|---------------|---------|--------------|---------|----------------------|---------------------------------|---------------|---------|--------------|---------|----------------------|--|
|                      | Vs Swk Normal |         | vs. Swk MD   |         | Curve Fit to BV Data | Significance                       | Vs Swk Normal |         | vs. Swk MD   |         | Curve Fit to BV Data | Significance                    | Vs Swk Normal |         | vs. Swk MD   |         | Curve Fit to BV Data |  |
|                      | Significance  | p-value | Significance | p-value |                      |                                    | Significance  | p-value | Significance | p-value |                      |                                 | Significance  | p-value | Significance | p-value |                      |  |
| Synapsin             | MD            | n.s.    | 0.2361       |         |                      | n.s.                               | 0.2113        |         |              | n.s.    | 0.4861               |                                 |               |         |              |         |                      |  |
|                      | RO            | ***     | 0.0000       | ***     | 0.0000               | ***                                | 0.0000        | ***     | 0.0000       | ***     | 0.0000               | ***                             | 0.0000        | ***     | 0.0000       |         |                      |  |
|                      | BD            | n.s.    | 0.1483       | *       | 0.0123               |                                    |               | n.s.    | 0.2252       | n.s.    | 0.0526               |                                 |               | ***     | 0.0001       | ***     | 0.0001               |  |
|                      | 1hr BV        | n.s.    | 0.1438       | *       | 0.0107               |                                    |               | ***     | 0.0000       | **      | 0.0026               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | 6hr BV        | ***     | 0.0000       | ***     | 0.0000               |                                    |               | *       | 0.0152       | n.s.    | 0.1051               |                                 |               | n.s.    | 0.2726       | n.s.    | 0.2829               |  |
|                      | 1d BV         | ***     | 0.0009       | ***     | 0.0000               |                                    |               | ***     | 0.0000       | ***     | 0.0001               |                                 |               | **      | 0.0095       | **      | 0.0095               |  |
|                      | 2d BV         | ***     | 0.0000       | ***     | 0.0000               |                                    |               | n.s.    | 0.1742       | n.s.    | 0.1002               |                                 |               | n.s.    | 0.1265       | n.s.    | 0.1215               |  |
| 4d BV                | **            | 0.0029  | ***          | 0.0000  |                      |                                    | n.s.          | 0.1474  | n.s.         | 0.0668  |                      |                                 | n.s.          | 0.3185  | n.s.         | 0.3037  |                      |  |
| GluA2                | MD            | n.s.    | 0.2338       |         |                      | **                                 | 0.0085        |         |              | n.s.    | 0.3516               |                                 |               |         |              |         |                      |  |
|                      | RO            | ***     | 0.0000       | ***     | 0.0000               |                                    |               | n.s.    | 0.0691       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | BD            | ***     | 0.0000       | ***     | 0.0000               |                                    |               | ***     | 0.0001       | n.s.    | 0.1110               |                                 |               | n.s.    | 0.2511       | n.s.    | 0.1042               |  |
|                      | 1hr BV        | ***     | 0.0000       | ***     | 0.0006               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | 6hr BV        | ***     | 0.0007       | n.s.    | 0.4871               |                                    |               | n.s.    | 0.1370       | *       | 0.0253               |                                 |               | *       | 0.0418       | n.s.    | 0.0760               |  |
|                      | 1d BV         | ***     | 0.0003       | *       | 0.0106               |                                    |               | ***     | 0.0000       | *       | 0.0405               |                                 |               | n.s.    | 0.0912       | n.s.    | 0.2506               |  |
|                      | 2d BV         | ***     | 0.0000       | ***     | 0.0000               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | *       | 0.0106       | ***     | 0.0006               |  |
| 4d BV                | n.s.          | 0.2257  | **           | 0.0051  |                      |                                    | ***           | 0.0000  | n.s.         | 0.1718  |                      |                                 | ***           | 0.0006  | ***          | 0.0000  |                      |  |
| GluN1                | MD            | ***     | 0.0000       |         |                      | **                                 | 0.0038        |         |              | n.s.    | 0.1573               |                                 |               |         |              |         |                      |  |
|                      | RO            | **      | 0.0041       | *       | 0.0104               |                                    |               | ***     | 0.0000       | ***     | 0.0002               |                                 |               | **      | 0.0019       | ***     | 0.0000               |  |
|                      | BD            | n.s.    | 0.1908       | *       | 0.0123               |                                    |               | n.s.    | 0.1753       | n.s.    | 0.1933               |                                 |               | n.s.    | 0.4286       | *       | 0.0292               |  |
|                      | 1hr BV        | ***     | 0.0000       | n.s.    | 0.0856               |                                    |               | ***     | 0.0000       | n.s.    | 0.2717               |                                 |               | **      | 0.0014       | ***     | 0.0000               |  |
|                      | 6hr BV        | ***     | 0.0000       | ***     | 0.0001               | $y = 297.43-239.58 \exp(-x/11.61)$ |               | n.s.    | 0.4143       | ***     | 0.0002               |                                 |               | n.s.    | 0.3155       | n.s.    | 0.0706               | $y = 62.45+61.87 \exp(-x/0.79)$                |
|                      | 1d BV         | *       | 0.0294       | *       | 0.0144               | df=25                              |               | ***     | 0.0000       | *       | 0.0366               |                                 |               | *       | 0.0001       | ***     | 0.0000               | df=24  |
|                      | 2d BV         | n.s.    | 0.3664       | ***     | 0.0039               | $R^2=0.618$                        |               | ***     | 0.0000       | n.s.    | 0.1493               |                                 |               | ***     | 0.0000       | ***     | 0.0000               | $R^2=0.361$                                    |
| 4d BV                | **            | 0.0044  | ***          | 0.0000  | p<0.0001             |                                    | ***           | 0.2547  | **           | 0.0000  |                      |                                 | *             | 0.0214  | ***          | 0.0000  | p=0.0012             |  |
| GluN2A               | MD            | ***     | 0.0000       |         |                      | ***                                | 0.0000        |         |              | *       | 0.0220               |                                 |               |         |              |         |                      |  |
|                      | RO            | n.s.    | 0.1367       | ***     | 0.0007               |                                    |               | ***     | 0.0000       | *       | 0.0142               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | BD            | ***     | 0.0000       | n.s.    | 0.0923               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | 1hr BV        | ***     | 0.0001       | *       | 0.0220               |                                    |               | ***     | 0.0000       | ***     | 0.0007               |                                 |               | ***     | 0.0005       | n.s.    | 0.2953               |  |
|                      | 6hr BV        | ***     | 0.0001       | ***     | 0.0000               | $y = 671.85-601.29 \exp(-x/39.72)$ |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | n.s.    | 0.2206               | $y = 52.37+(77.48-52.37)/(1+(x/1.06)^{14.48})$ |
|                      | 1d BV         | n.s.    | 0.2788       | **      | 0.0065               | df=23                              |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | n.s.    | 0.1832               | df=24  |
|                      | 2d BV         | n.s.    | 0.2635       | ***     | 0.0000               | $R^2=0.528$                        |               | ***     | 0.0000       | n.s.    | 0.4093               |                                 |               | ***     | 0.0000       | ***     | 0.0000               | $R^2=0.422$                                    |
| 4d BV                | n.s.          | 0.1022  | ***          | 0.0002  | p<0.0001             |                                    | ***           | 0.0003  | n.s.         | 0.0957  |                      |                                 | ***           | 0.0000  | ***          | 0.0000  | p=0.0003             |  |
| GluN2B               | MD            | n.s.    | 0.4587       |         |                      | n.s.                               | 0.1907        |         |              | n.s.    | 0.0606               |                                 |               |         |              |         |                      |  |
|                      | RO            | ***     | 0.0000       | ***     | 0.0000               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | BD            | **      | 0.0085       | **      | 0.0013               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | *       | 0.0354       | ***     | 0.0000               |  |
|                      | 1hr BV        | n.s.    | 0.4438       | n.s.    | 0.3090               |                                    |               | **      | 0.0059       | ***     | 0.0000               |                                 |               | *       | 0.0374       | ***     | 0.0000               |  |
|                      | 6hr BV        | n.s.    | 0.0574       | *       | 0.0384               |                                    |               | **      | 0.0033       | n.s.    | 0.3986               |                                 |               | *       | 0.0172       | ***     | 0.0000               | $y = 80.23+137.58 \exp(-x/0.04)$               |
|                      | 1d BV         | n.s.    | 0.1647       | n.s.    | 0.0745               |                                    |               | n.s.    | 0.1926       | **      | 0.0050               |                                 |               | n.s.    | 0.0893       | ***     | 0.0000               | df=24  |
|                      | 2d BV         | n.s.    | 0.3470       | n.s.    | 0.3570               |                                    |               | n.s.    | 0.0574       | ***     | 0.0004               |                                 |               | n.s.    | 0.1156       | ***     | 0.0000               | $R^2=0.396$                                    |
| 4d BV                | n.s.          | 0.4151  | n.s.         | 0.4538  |                      |                                    | **            | 0.0024  | ***          | 0.0000  |                      |                                 | ***           | 0.0007  | ***          | 0.0000  | p=0.0006             |  |
| GABA <sub>A</sub> α1 | MD            | ***     | 0.0000       |         |                      | ***                                | 0.0007        |         |              | ***     | 0.0000               |                                 |               |         |              |         |                      |  |
|                      | RO            | *       | 0.0239       | ***     | 0.0000               |                                    |               | ***     | 0.0008       | ***     | 0.0000               |                                 |               | **      | 0.0026       | n.s.    | 0.1754               |  |
|                      | BD            | n.s.    | 0.0977       | n.s.    | 0.1914               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | 1hr BV        | n.s.    | 0.1903       | n.s.    | 0.2725               |                                    |               | *       | 0.0357       | ***     | 0.0000               |                                 |               | ***     | 0.0002       | ***     | 0.0000               |  |
|                      | 6hr BV        | n.s.    | 0.2956       | ***     | 0.0000               | $y = 57.31+77.01 \exp(-x/0.47)$    |               | ***     | 0.0000       | **      | 0.0070               |                                 |               | ***     | 0.0000       | ***     | 0.0000               |  |
|                      | 1d BV         | ***     | 0.0000       | ***     | 0.0000               | df=24                              |               | **      | 0.0022       | ***     | 0.0000               |                                 |               | n.s.    | 0.2356       | **      | 0.0011               |  |
|                      | 2d BV         | ***     | 0.0006       | ***     | 0.0000               | $R^2=0.636$                        |               | n.s.    | 0.0562       | ***     | 0.0000               |                                 |               | n.s.    | 0.0000       | *       | 0.0179               |  |
| 4d BV                | ***           | 0.0000  | ***          | 0.0000  | p<0.0001             |                                    | ***           | 0.0000  | ***          | 0.0000  |                      |                                 | ***           | 0.0000  | ***          | 0.0000  |                      |  |
| GABA <sub>A</sub> α3 | MD            | ***     | 0.0010       |         |                      | ***                                | 0.0001        |         |              | ***     | 0.0000               |                                 |               |         |              |         |                      |  |
|                      | RO            | n.s.    | 0.0614       | n.s.    | 0.3711               |                                    |               | **      | 0.0015       | n.s.    | 0.4668               |                                 |               | **      | 0.0094       | n.s.    | 0.0883               |  |
|                      | BD            | ***     | 0.0000       | ***     | 0.0000               |                                    |               | ***     | 0.0000       | *       | 0.0141               |                                 |               | n.s.    | 0.4510       | **      | 0.0040               |  |
|                      | 1hr BV        | ***     | 0.0001       | n.s.    | 0.2468               |                                    |               | ***     | 0.0000       | ***     | 0.0000               |                                 |               | ***     | 0.0000       | ***     | 0.0031               |  |
|                      | 6hr BV        | n.s.    | 0.0524       | n.s.    | 0.4068               | $y = 40.25+33.81 \exp(-x/2.87)$    |               | ***     | 0.0000       | n.s.    | 0.0917               | $y = 47.66+20.83 \exp(-x/0.51)$ |               |         | n.s.         | 0.2084  | ***                  | 0.0000   |
|                      | 1d BV         | ***     | 0.0000       | ***     | 0.0001               | df=25                              |               | ***     | 0.0000       | ***     | 0.0000               | df=91                           |               |         | ***          | 0.0000  | ***                  | 0.0007   |
|                      | 2d BV         | ***     | 0.0000       | ***     | 0.0047               | $R^2=0.211$                        |               | ***     | 0.0000       | ***     | 0.0000               | $R^2=0.163$                     |               |         | ***          | 0.0000  | n.s.                 | 0.4088   |
| 4d BV                | ***           | 0.0003  | *            | 0.0229  | p=0.0159             |                                    | ***           | 0.0000  | ***          | <0.0001 |                      |                                 | ***           | 0.0000  | n.s.         | 0.1572  |                      |  |

Table 3-1. Table of p-values comparing protein expression in each treatment condition against Swk Normal animals and Swk MD animals. P-values are presented for each cortical area (columns) and protein (rows). Cortical areas are broken up into comparisons against normal (left) and MD (right). Asterisk color coding matches Figure 3. When a curve fit was applied, the equation, degrees of freedom (df), R<sup>2</sup> value and exact p-value are listed.