|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arc | Connection type | | | With Type-I 5-HT neurons | | | | | | | | | |
| a | **Punishment** | | | | | **Reward** | | | | |
| **VTA**  **DA**  **\*** | **DRN**  **5-HT**  **\*** | **DRN**  **GABA**  **\*** | **VTA**  **GABA**  **\*** | **VTA**  **Glu**  **\*** | **VTA**  **DA**  **\*** | **DRN**  **5-HT**  **\*** | **DRN**  **GABA**  **\*** | **VTA**  **GABA**  **\*** | **VTA**  **Glu**  **\*** |
| **DA🡪**  **VTA**  **GABA ()** | **5HT🡪**  **DA ()** | **5HT🡪**  **Glu ()** | 64.43 | 4.56 | 7.36 | 0.34 | 0.50 | 64.01 | 13.85 | 5.82 | 3.68 | 0.72 |
| **5HT🡪**  **Glu ()** | 66.19 | 4.91 | 7.35 | 0.38 | 0.50 | 63.46 | 2.37 | 5.86 | 0.46 | 0.66 |
| **5-HT🡪**  **VTA**  **GABA ()** | **5HT🡪**  **DA ()** | **5HT🡪**  **Glu ()** | 67.34 | 4.47 | 7.35 | 0.34 | 0.50 | 64.88 | 2.13 | 5.85 | 0.40 | 0.66 |
| **5HT🡪**  **Glu ()** | 66.19 | 4.91 | 7.35 | 0.38 | 0.50 | 61.98 | 1.55 | 6.05 | 1.24 | 0.64 |
| **DA🡪**  **VTA**  **GABA ()** | **5HT🡪**  **DA ()** | **5HT🡪**  **Glu ()** | 64.91 | 4.18 | 17.41 | 0.94 | 0.50 | 64.50 | 13.81 | 6.56 | 4.27 | 0.72 |
| **5HT🡪**  **Glu ()** | 66.66 | 4.53 | 17.41 | 0.97 | 0.50 | 63.95 | 2.29 | 6.54 | 1.04 | 0.66 |
| **5-HT🡪**  **VTA**  **GABA ()** | **5HT🡪**  **DA ()** | **5HT🡪**  **Glu ()** | 67.82 | 4.10 | 17.40 | 0.93 | 0.50 | 65.37 | 2.05 | 6.53 | 0.98 | 0.66 |
| **5HT🡪**  **Glu ()** | 66.66 | 4.53 | 17.41 | 0.97 | 0.50 | 62.47 | 1.59 | 6.38 | 0.66 | 0.64 |
| b | **5HT🡪Glu ()** | | | 66.73 | 6.05 | 8.47 | 1.02 | 0.50 | 64.09 | 4.23 | 11.30 | 1.16 | 0.67 |
| **5HT🡪Glu ()** | | | 60.91 | 3.31 | 8.59 | 0.38 | 4.95 | 56.91 | 2.67 | 11.46 | 0.45 | 6.54 |
| c | **-** | | | 66.66 | 2.22 | 8.58 | 0.27 | 0.00 | 64.02 | 1.70 | 11.45 | 0.30 | 0.00 |
| d | **-** | | | 66.81 | 4.67 | 1.01 | 0.44 | 0.00 | 64.27 | 3.31 | 1.05 | 0.55 | 0.00 |
| e | **-** | | | 64.99 | 2.45 | 0.04 | 0.12 | 0.00 | 62.02 | 1.90 | 0.04 | 0.12 | 0.00 |
| f | **-** | | | 64.63 | 2.27 | 0.17 | 0.45 | 0.00 | 61.55 | 1.52 | 0.22 | 0.52 | 0.00 |
| g | **-** | | | 65.00 | 0.00 | 2.35 | 0.00 | 0.00 | 61.99 | 0.00 | 2.59 | 0.00 | 0.00 |
| h | **-** | | | 65.37 | 4.69 | 0.16 | 0.44 | 0.00 | 62.47 | 3.33 | 0.24 | 0.55 | 0.00 |
| i | **-** | | | 62.15 | 0.00 | 0.00 | 0.00 | 0.00 | 58.45 | 0.00 | 0.00 | 0.00 | 0.00 |
| j | **-** | | | 67.86 | 0.00 | 0.00 | 0.00 | 0.00 | 65.54 | 0.00 | 0.00 | 0.00 | 0.00 |
| k | **-** | | | 65.00 | 0.00 | 0.00 | 0.00 | 0.00 | 61.99 | 0.00 | 0.00 | 0.00 | 0.00 |
| l | **5HT🡪DA ()** | | | 67.33 | 2.12 | 7.44 | 1.13 | 0.49 | 65.22 | 1.76 | 5.23 | 1.67 | 0.65 |
| **5HT🡪DA ()** | | | 65.50 | 2.17 | 7.45 | 1.14 | 0.49 | 62.69 | 1.81 | 5.22 | 1.67 | 0.65 |