**Table S3. Expression of neurotransmitter biosynthetic, vesicular loading and reuptake genes in mouse PNECs1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Synthesis (S)** | **Vesicular transport (VT)** | **Reuptake (R)** |
| **Neurotransmitter** | **Sum** | **Genes (%NE+)** | **S** | **Genes (%NE+)** | **VT** | **Genes (%NE+)** | **R** |
| Serotonin | + | Tph1 (0%), Tph2 (0%), Ddc (63%) | - | Slc18a1/VMAT1 (46%), Slc18a2 /VMAT2 (1%) | +  | **Slc6a4** (24%) | + |
| GABA | + | **Gad1** (28%),Gad2 (0%) | + | Slc32a1/VIAAT (0%) | - | Slc6a1 (0%), Slc6a11 (0%), Slc6a13 (0%),Slc6a12 (0%) | - |
| Glutamate | + | Gls (31%), Gls2 (0%) | + | Slc17a7 (0%), **Slc17a6** (1%),Slc17a8 (90%) | +  | Slc1a1 (0%), Slc1a2 (0%), Slc1a3 (0%), Slc1a6 (0%), Slc1a7 (0%) | - |
| Dopamine | + | **Th** (1%), Ddc (63%) | + | Slc18a1/VMAT1 (46%),Slc18a2 /VMAT2 (1%) | +  | Slc6a3 (0%) | - |
| Norepinephrine | - | Th (1%),Ddc (63%), Dbh (0%) | - | Slc18a1/VMAT1 (46%), Slc18a2 /VMAT2 (1%) | + | Slc6a2 (1%) | + |
| Epinephrine | - | Th (1%), Ddc (63%), Dbh (0%), Pnmt (0%) | - | Slc18a1/VMAT1(46%), Slc18a2 /VMAT2 (1%) | +  | Slc6a2 (1%) | + |
| Acetylcholine | - | Chat (0%) | - | **Slc18a3**/VAChT (1%) | +  | Slc5a7 (0%), Slc44a4 (0%) | - |
| Glycine | - | NA | NA | Slc32a1/VIAAT | - | Slc6a9 (16%, NS), Slc6a5 (0%) | (+) |
| Histamine | + | **Hdc** (1%) | + | Slc18a1/VMAT1 (46%), Slc18a2 /VMAT2 (1%) | +  | NA | NA |

Sum (Summary), overall inferred activity of neurotransmitter pathway. +, expressed neurotransmitter or gene (percent of PNECs expressing); (+), some but not all genes in biosynthetic pathway detected; -, gene(s) not detected. Bold font, genes unique to neurotransmitter pathway. Red, genes not previously known to be expressed. Tph1, Tryptophan hydroxylase 1; Tph2, Tryptophan hydroxylase 2; Ddc, Dopamine decarboxylase; Gad1, Glutamate decarboxylase 1, Gad2, Glutamate decarboxylase 2; VMAT1, vesicular monoamine transporter 1; VMAT2, vesicular monoamine transporter 2. VIAAT, vesicular inhibitory amino acid transporter. NA, not applicable; NS, not selectively expressed in PNECs.

Neurotransmitter pathway genes curated from Shammas NK, Hung Y-T, Wang Z-W, editors (2008)

Neurotransmitter reuptake and synaptic vesicle refilling. In Molecular Mechanisms of Neurotransmitter

Release, Contemporary Neuroscience Series (Human Press), p. 264-293.