**Supplemental Table 1**: Postmortem cases and H3K4me3 ChIP-seq statistics

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Case** | **Brain Bank** | **Brain Bank ID** | **Diagnosis** | **Gender** | **Age (yrs)** | **PMI, h** | **pH** | **Total tags (mlns)** | **Unique map to genome (%)** | **Unique map to promoter (%)** | **Cause of death** | **Medication** |
| A1 | HBTRC | AN03345 | Autism**\*, 0** | M | 2 | 4 | 6.5 | 15.9 | 83 | 64 | Drowning | N.R. |
| A2 | UM-BTB | 4671 | Autism**\*** | F | 4.5 | 13 | N.D. | 3.4 | 85 | 48 | Accident | N.R. |
| A3 | UM-BTB | 1349 | Autism | M | 5.6 | 39 | 6.8 | 19.7 | 90 | 69 | Drowning | aAPD, AchE inhibitor |
| A4 | UM-BTB | 5144 | Autism**\*** | M | 7.2 | 3 | 6.3 | 20.6 | 90 | 65 | Cancer | N.R. |
| A5 | UM-BTB | 1174 | Autism**\*1** | F | 7.8 | 14 | 6.6 | 14.3 | 84 | 39 | Seizure | Phenytoin., CPZ, VPA |
| A6 | UM-BTB | 4721 | Autism**\*** | M | 8.8 | 16 | N.D. | 20.2 | 92 | 73 | Drowning | N.R. |
| A7 | UM-BTB | 797 | Autism**\*** | M | 9.3 | 13 | 6.7 | 6.4 | 86 | 63 | Drowning | Tricyclic |
| A8 | UM-BTB | 4899 | Autism**\*** | M | 14 | 9 | N.D. | 12.6 | 91 | 68 | Drowning | Oxcarb., SSRI, Alpha 2 agonist |
| A9 | HBTRC | AN04682 | Autism**#1,2,3** | M | 15 | 23 | 6.1 | 17.8 | 89 | 62 | Asphyxia/hanging | N.R. |
| A10 | HBTRC | AN00764 | Autism**\*** | M | 20 | 24 | 6.6 | 23.1 | 87 | 58 | Accident | N.R. |
| A11 | UM-BTB | 1638 | Autism**\*** | F | 21 | 50 | N.D. | 10.9 | 86 | 61 | COPD/seizure | aAPD, tAPD, VPA |
| A12 | HBTRC | AN09730 | Autism**\*1** | M | 22 | 25 | 6.3 | 11.7 | 88 | 62 | Aspiration/seizure | Lam., Zon. |
| A13 | HBTRC | AN00493 | Autism\* | M | 27 | 8.3 | 6.6 | 10.0 | 84 | 49 | Drowning | N.R. |
| A14 | HBTRC | AN12457 | Autism**\*1, 4** | F | 29 | 17 | 6 | 14.0 | 86 | 49 | Seizure | SSRI, Lam. |
| A15 | HBTRC | AN08166 | Autism**\*#1** | M | 29 | 43 | 6.7 | 17.9 | 83 | 35 | Seizure | aAPD, CPZ |
| A16 | HBTRC | AN09714 | Autism**\*1** | M | 60 | 26 | 6.1 | 9.7 | 83 | 41 | Pancreaticcancer | Phenytoin, Pheno., CPZ  |
| C1 | UM-BTB | 1330 | Ctrl | M | 0.5 | N.D. | 6 | 6.7 | 85 | 67 | Complications of prematurity |   |
| C2 | UM-BTB | 1303 | Ctrl | M | 0.6 | 8 | 6.6 | 2.1 | 73 | 67 | Positional asphyxia |   |
| C3 | UM-BTB | 1328 | Ctrl | F | 0.8 | 8 | 6 | 4.7 | 80 | 58 | Respiratory insufficiency |   |
| C4 | UM-BTB | 814 | Ctrl | M | 1.3 | 19 | 6.5 | 3.0 | 85 | 68 | Drowning |   |
| C5 | UM-BTB | 1791 | Ctrl | F | 2.8 | 12 | 6.5 | 6.3 | 78 | 51 | Drowning |   |
| C6 | UM-BTB | 1185 | Ctrl | M | 4.7 | 17 | 6.5 | 3.8 | 79 | 63 | Drowning |   |
| C7 | UM-BTB | 1860 | Ctrl | M | 8.8 | 5 | 6.7 | 2.2 | 81 | 71 | Cardiac arrhythmia |   |
| C8 | UM-BTB | 1908 | Ctrl | M | 14 | 13 | 7 | 3.2 | 74 | 55 | Accident |   |
| C9 | MPRC | D-11 | Ctrl | M | 20 | 15 | 6.4 | 10.7 | 86 | 56 | Gun shot to chest, homicide |   |
| C10 | MPRC | G-9 | Ctrl | M | 24 | 22 | 6.5 | 4.1 | 82 | 39 | Gun shot to chest, suicide |   |
| C11 | MPRC | B-24 | Ctrl | F | 28 | 24 | 6.7 | 23.4 | 85 | 49 | Congenital heart disease |   |
| C12 | UCI/UCD | 1698 | Ctrl | M | 38 | 16 | 6.1 | 7.6 | 66 | 71 | Cardiac |   |
| C13 | MPRC | R7 | Ctrl | M | 55 | 17 | 6.9 | 6.0 | 82 | 51 | Cardiac  |   |
| C14 | UCI/UCD | 2037 | Ctrl | F | 69 | 40 | 6.3 | 4.6 | 83 | 62 | Cardiac |   |
| C14input | UCI/UCD | 2037 | Ctrl | F | 69 | 40 | 6.3 | 15.9 | 77 | 4 | Cardiac |   |

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| Brain Banks: HBTRC: Harvard Brain Tissue Resource Center; UM-BTB: University of Maryland Brain and Tissue Bank for Developmental Disorders; MPRC: Maryland Psychiatric Research Center; UCI/UCD, University of California Irvine/Davis. ACHE = acetylcholine esterase, (a)(t)APD = (atypical/typical) antipsychotic drug, CPZ = carbamazepine, Lam = lamotrigine, Oxcarb = oxacarbazepine, N.R. = none reported, Pheno= Phenobarbital, Zon = zonisamide |
|  |
| \*, ADI-R criteria confirmed by Autism Tissue Program |
| #, Asperger’s or other high functioning disease form |
| 0, hypoxic encephalopathy |
| 1, history of seizures and/or anticonvulsant treatment |
| 2, suicide |
| 3, agonal state for at least 12 hours before death |
| 4, status epilepticus> 24 hours before death |