**Supplementary appendix**

**Supplementary Table 1.** Magnetic Resonance Imaging acquisition parameters for T1-weighted scans in the Toronto, Cornell University/Nathan Kline Institute (NKI), and University of Pittsburgh Medical Centre (UPMC) samples.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Repetition Time (TR; msec) | Echo Time (TE; msec) | Flip angle | Matrix | Slice thickness (mm) | Number of slices |
| Toronto | 6·7 | 3·0 | 8° | 256 x 256 | 0·9 | 200 |
| Cornell/NKI | 2500 | 3·5 | 8° | 256 x 256 | 1·0 | 192 |
| UPMC | 2300 | 3·5 | 8° | 256 x 232 | 0·9 | 208 |

**Supplementary Table 2.** Clusters with significant default mode network related functional connectivity for the contrast Patients<Controls in the Toronto sample.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Extent (vox)** | **x** | **y** | **z** | **t value** | **p value** |
| R planum polare | 25537 | 62 | -4 | 2 | 4·831 | 0·001 |
| L lingual gyrus | 2146 | -4 | -76 | 6 | 3·632 | 0·030 |
| L lateral occipital cortex | 274 | -62 | -74 | 4 | 4·311 | 0·035 |
| R frontal pole | 219 | 42 | 64 | -8 | 3·697 | 0·039 |
| L occipital pole | 194 | -20 | -106 | 18 | 3·924 | 0·038 |
| L occipital pole | 68 | -18 | -112 | -6 | 3·901 | 0·043 |
| R lateral occipital cortex | 47 | 54 | -86 | 6 | 3·982 | 0·045 |
| R PCC | 45 | 10 | -18 | 36 | 2·976 | 0·047 |
| L precentral gyrus | 8 | -76 | 4 | 30 | 3·433 | 0·048 |
| R ACC | 5 | 8 | -8 | 34 | 2.800 | 0·049 |
| The extent (number of voxels) and peak Montreal Neurological Institute (MNI) coordinates are given for each cluster (p<0·05; Family Wise Error (FWE) corrected). R: Right; L: Left; PCC: Posterior Cingulate Cortex; ACC: Anterior Cingulate Cortex | | | | | | |

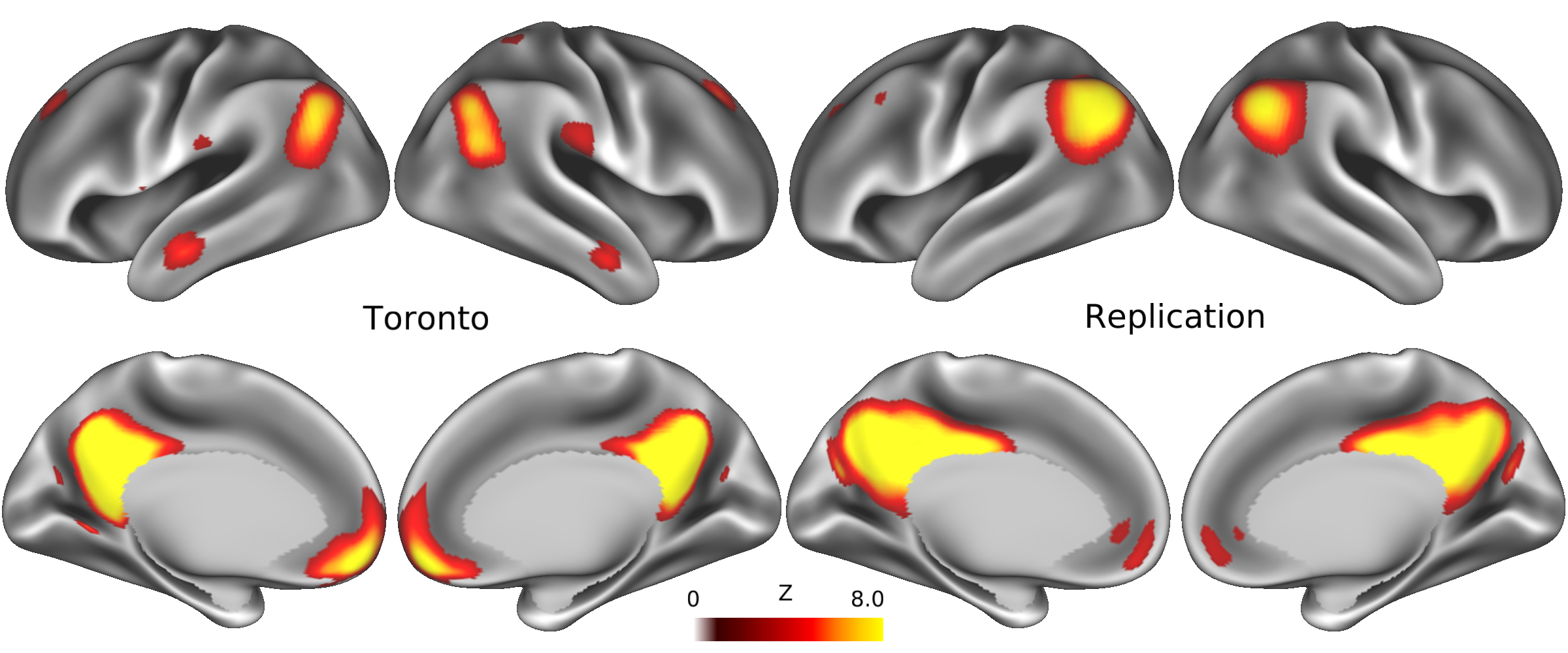
**Supplementary Table 3.** Clusters with significant default mode network related functional connectivity for the contrast Patients<Controls in the Replication sample.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Extent (vox)** | **x** | **y** | **z** | **t value** | **p value** |
| R precentral gyrus | 43852 | 2 | -14 | 58 | 4·144 | 0·003 |
| R precentral gyrus | 94 | 64 | 12 | 24 | 2·949 | 0·047 |
| R middle frontal gyrus | 57 | 44 | 32 | 20 | 2·605 | 0·049 |
| R middle frontal gyrus | 27 | 56 | 36 | 38 | 3·620 | 0·047 |
| R insula | 18 | 34 | 16 | -6 | 3·119 | 0·049 |
| The extent (number of voxels) and peak Montreal Neurological Institute (MNI) coordinates are given for each cluster (p<0·05; Family Wise Error (FWE) corrected). R: Right; L: Left | | | | | | |

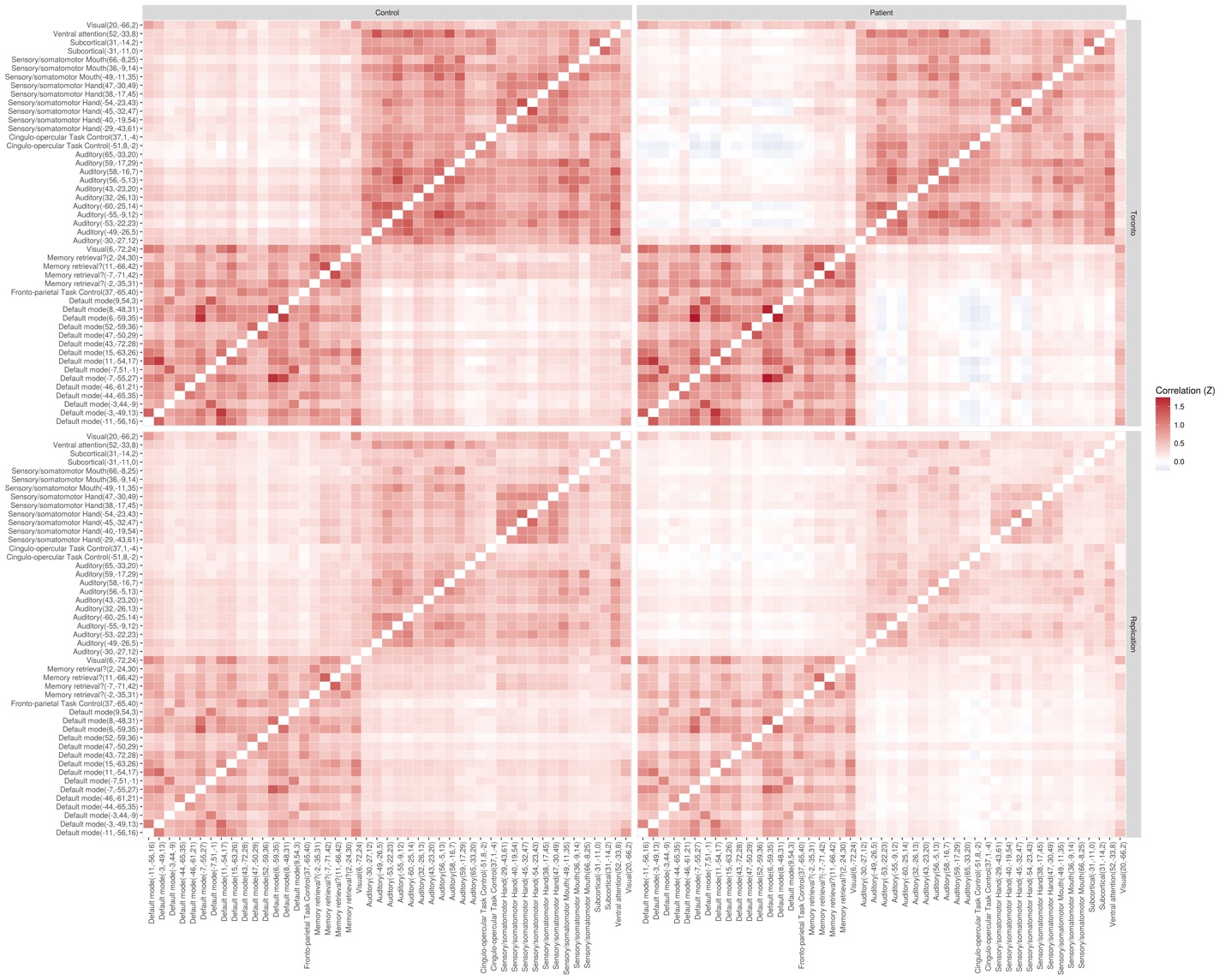
**Supplementary Table 4.** Post-hoc analyses of medication effects. Medication effects were examined and given skew as well as dose targets, doses were binned into maximum and less than maximum doses for sertraline (200mg and <200mg, respectively) and olanzapine (20mg and <20mg). Exploratory models were then pursued to examine the combined as well as separate effects of sertraline and olanzapine on mean functional connectivity within and between the auditory (AUD), somatomotor (SMN), and default mode (DMN) networks. Results were Bonferroni corrected.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Network** | **Sample** | **Medication** | **t value (combined)** | **p value uncorr (combined)** | **p value corr (combined)** | **t value (separate)** | **p value uncorr (separate)** | **p value corr (separate)** |
| Within DMN | Toronto | Sertraline | -1·018 | 0·32 | 1·00 | -0·433 | 0·67 | 1·00 |
| Within DMN | Toronto | Olanzapine | 0·967 | 0·34 | 1·00 | 0·294 | 0·77 | 1·00 |
| Within DMN | Replication | Sertraline | -1·889 | 0·07 | 0·42 | -2·961 | 0·006 | 0·04 |
| Within DMN | Replication | Olanzapine | -1·091 | 0·29 | 1·00 | -2·423 | 0·02 | 0·14 |
| Within SMN | Toronto | Sertraline | -0·463 | 0·65 | 1·00 | 0·680 | 0·50 | 1·00 |
| Within SMN | Toronto | Olanzapine | 1·186 | 0·25 | 1·00 | 1·309 | 0·20 | 1·00 |
| Within SMN | Replication | Sertraline | 0·094 | 0·93 | 1·00 | -0·023 | 0·98 | 1·00 |
| Within SMN | Replication | Olanzapine | -0·206 | 0·84 | 1·00 | -0·189 | 0·85 | 1·00 |
| Within AUD | Toronto | Sertraline | 0·830 | 0·41 | 1·00 | 0·192 | 0·85 | 1·00 |
| Within AUD | Toronto | Olanzapine | -0·924 | 0·36 | 1·00 | -0·453 | 0·65 | 1·00 |
| Within AUD | Replication | Sertraline | -0·136 | 0·89 | 1·00 | -0·263 | 0·79 | 1·00 |
| Within AUD | Replication | Olanzapine | -0·146 | 0·89 | 1·00 | -0·268 | 0·79 | 1·00 |
| SMN-AUD | Toronto | Sertraline | -0·187 | 0·85 | 1·00 | 0·470 | 0·64 | 1·00 |
| SMN-AUD | Toronto | Olanzapine | 0·637 | 0·53 | 1·00 | 0·781 | 0·44 | 1·00 |
| SMN-AUD | Replication | Sertraline | -0·338 | 0·74 | 1·00 | -0·443 | 0·66 | 1·00 |
| SMN-AUD | Replication | Olanzapine | -0·046 | 0·96 | 1·00 | -0·281 | 0·78 | 1·00 |
| DMN-SMN | Toronto | Sertraline | -0·364 | 0·72 | 1·00 | -0·344 | 0·73 | 1·00 |
| DMN-SMN | Toronto | Olanzapine | 0·191 | 0·85 | 1·00 | -0·137 | 0·89 | 1·00 |
| DMN-SMN | Replication | Sertraline | -0·575 | 0·57 | 1·00 | -0·818 | 0·42 | 1·00 |
| DMN-SMN | Replication | Olanzapine | -0·176 | 0·86 | 1·00 | -0·595 | 0·56 | 1·00 |
| DMN-AUD | Toronto | Sertraline | 0·017 | 0·99 | 1·00 | -0·477 | 0·64 | 1·00 |
| DMN-AUD | Toronto | Olanzapine | -0·419 | 0·68 | 1·00 | -0·641 | 0·53 | 1·00 |
| DMN-AUD | Replication | Sertraline | -0·517 | 0·61 | 1·00 | -0·848 | 0·40 | 1·00 |
| DMN-AUD | Replication | Olanzapine | -0·329 | 0·75 | 1·00 | -0·742 | 0·46 | 1·00 |

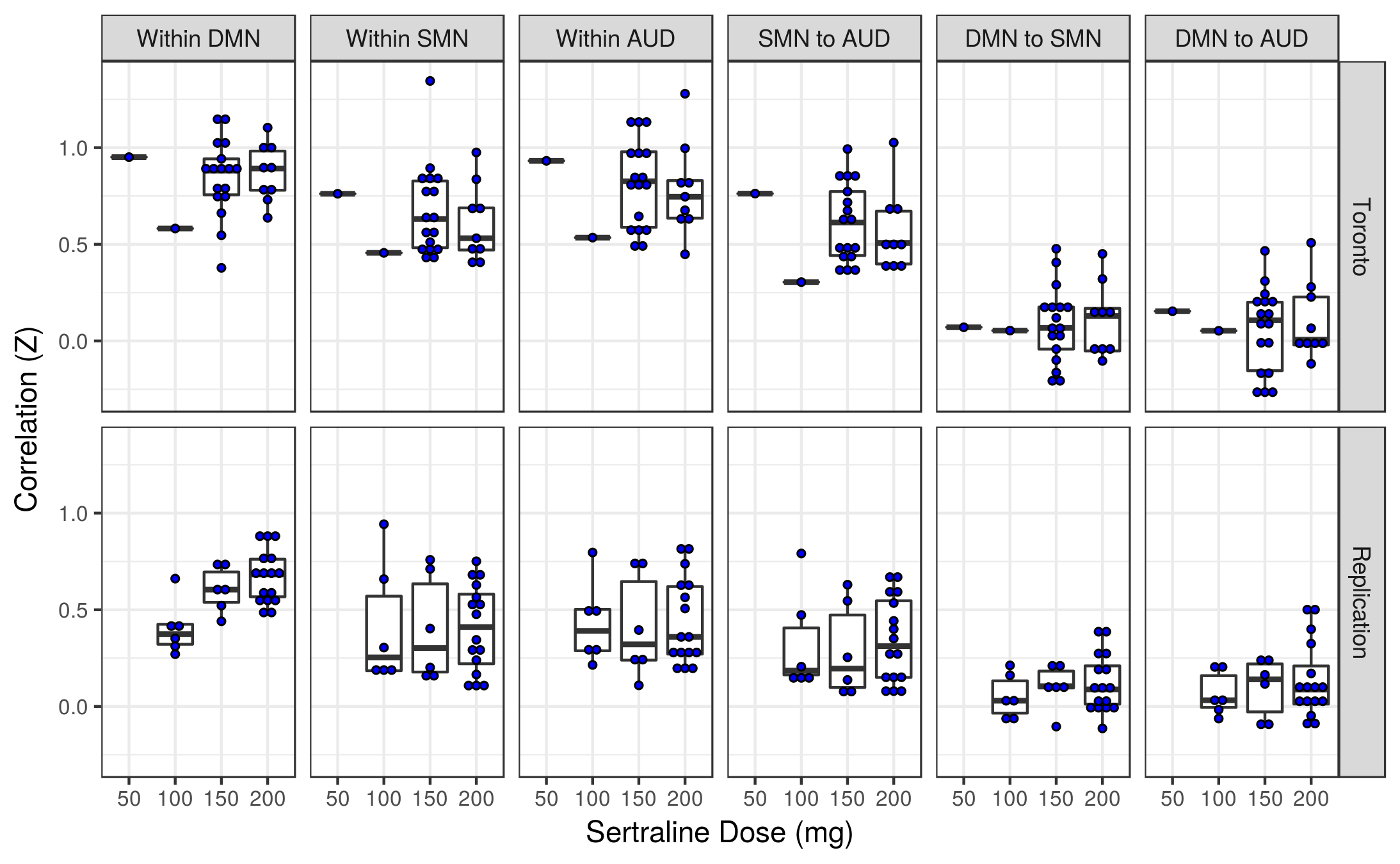
**Supplementary Figure 1.** The default mode network (DMN) identified using group Independent Component Analysis in the Toronto and Replication samples.

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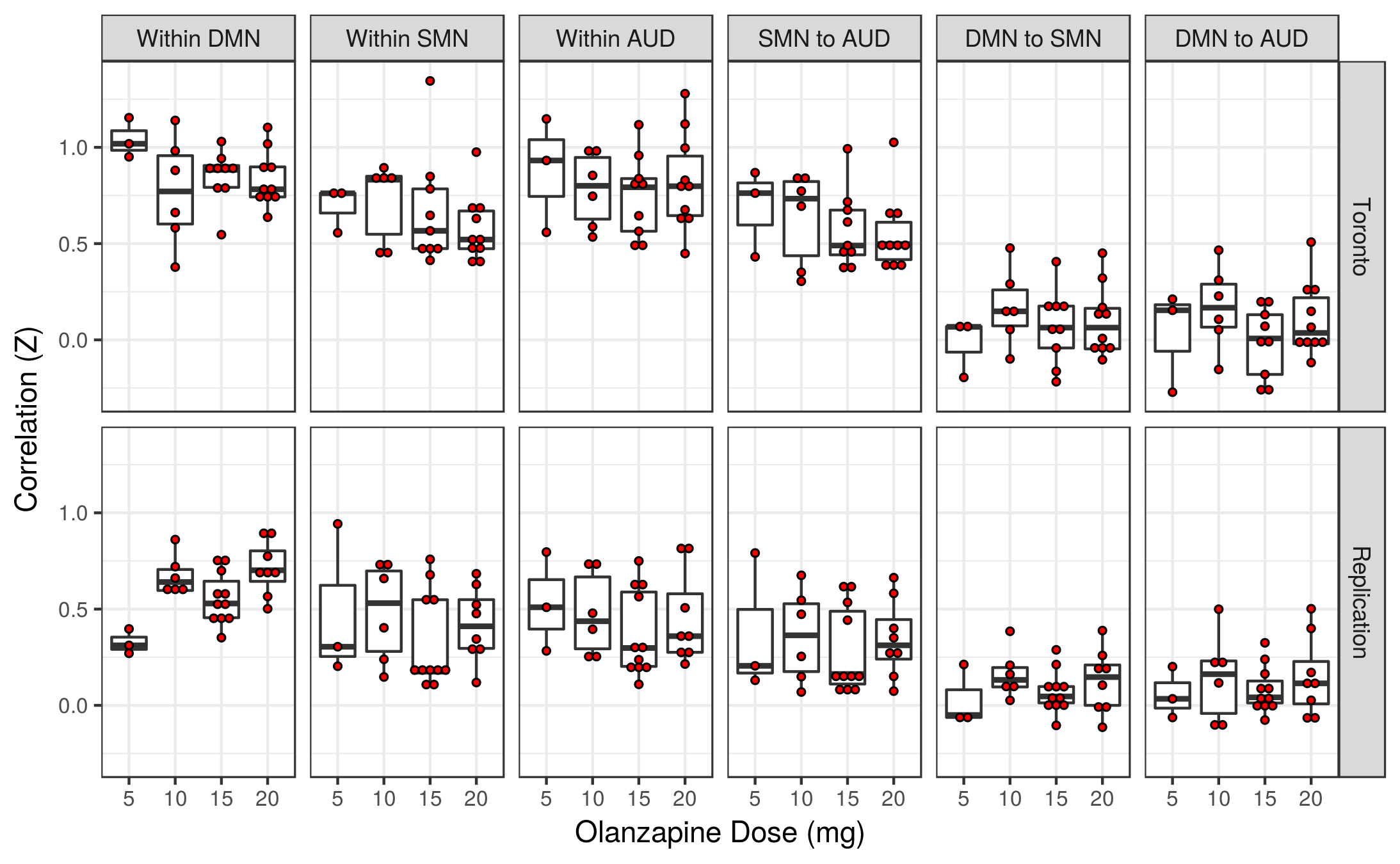
**Supplementary Figure 2.** Covariance matrices of regions of interest (ROIs) derived from the Power atlas representing brain regions with the greatest amount of overlap between the Toronto and Replication samples. ROI-ROI correlations are z-transformed.



**Supplementary Figure 3.** Post-hoc analyses of the relationship between sertraline dose and mean functional connectivity within and between the auditory (AUD), somatomotor (SMN), and default mode (DMN) networks.



**Supplementary Figure 4.** Post-hoc analyses of the relationship between olanzapine dose and mean functional connectivity within and between the auditory (AUD), somatomotor (SMN), and default mode (DMN) networks.

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