

ADNI-NPC Neuropathology Protocols

Where possible, each center will undertake its own brain assessment and forward a standard set of fixed tissue blocks or sections and frozen tissue to ADNI-NPC (see below). For sites that do not routinely undertake neuropathologic studies, a separate brain removal protocol is listed in the Appendix.

Financial Assistance with Block Sampling, Preservation, and Shipping Costs

The ADNI-NPC will fund all costs in shipping frozen and fixed tissue samples to St. Louis. To assist participating centers and neuropathologists with the costs of obtaining frozen tissue blocks and/or formalin-fixed paraffin wax-embedded tissue the following costs will be reimbursed, if requested. Please address an invoice for these costs to the ADNI NPC Coordinator at Washington University School of Medicine. The ADNI NPC is unable to provide funds without an invoice.

1. Recovery of coronal frozen tissue slices and formalin-fixed paraffin wax-embedded tissue blocks (*see list of brain regions below) \$300.
2. Recovery of formalin-fixed paraffin wax-embedded tissue sections (*see list of brain regions below) \$100.

ADNI-NPC Block Sampling

Resources to defray the costs of sampling, tissue processing, administration, and transport will be made available to each center already undertaking neuropathology. These resources are to facilitate the provision of the standard set of blocks for ADNI-NPC. To minimize the burden on participating centers, formalin-fixed, paraffin wax-embedded tissue blocks from the following 16 areas from the left cerebrum will be forwarded to the ADNI-NPC. Whenever possible, blocks should be labeled with the number below in parenthesis. If this is cannot be accommodated, a key to the block numbers should be included with block shipment.

1. Middle frontal gyrus (Block 1)
2. Superior and middle temporal gyri (Block 2)
3. Inferior parietal lobe (angular gyrus) (Block 3)
4. Occipital lobe to include the calcarine sulcus and peristriate cortex (Block 4)
5. Anterior cingulate gyrus at the level of the genu of the corpus callosum (Block 19)
6. Posterior cingulate gyrus and precuneus at the level of the splenium (Block 30)
7. Amygdala and entorhinal cortex (Block 23)
8. Hippocampus and parahippocampal gyrus at the level of the lateral geniculate nucleus (Block 5)
9. Striatum (caudate nucleus and putamen) at the level of the anterior commissure (Block 6)
10. Lentiform nuclei (globus pallidus and putamen) (Block 29)
11. Thalamus and subthalamic nucleus (Block 8)
12. Midbrain (Block 9)
13. Pons (Block 11)
14. Medulla oblongata (Block 12)

15. Cerebellum with dentate nucleus (Block 14)
16. Spinal cord (Block 13)

In the unusual situation where it is impractical to forward a tissue block (e.g., if the block is used for stereology), 10 paraffin wax sections (4-8 μm) from each block will be provided to ADNI-NPC for systematic neuropathology and diagnosis.

Frozen Tissue

To provide tissue for biochemical studies and to advance the aims of the Biomarkers Study, snap frozen tissue will be dissected, frozen, and sent to ADNI-NPC. The following coronal hemibrain slices (0.5 to 1cm thick), where possible, will be taken:

1. Frontal lobe to include striatum;
2. Frontal and temporal lobe at the level of the mamillary body;
3. Temporal and parietal lobes at the level of the lateral geniculate nucleus;
4. Occipital lobe to include the calcarine sulcus.
5. Cerebellar hemisphere to include the dentate nucleus