

The following paragraphs describe the methods that were used on the different version(s) of the Monkey Atlas.

Monkey Atlas

Cryo

Closely spaced (50 μ m) images of the specimen blockface were digitally acquired and modified to produce whole head and brain only 3D image sets. The resulting data sets were organized into a digital volume and repositioned into a stereotaxic coordinate system defined by Horsley and Clark (1908). From the rotated data sets, orthogonal images were obtained by digitally resampling the volume in order to produce a full set of coronal, sagittal, and horizontal images. Stereotaxic reference grids were applied to each image indicating the A/P, M/L, or Hc (depending on orientation of cut) position within the digital volume. Specific anatomic structures were outlined from the cryosection data set and 3D surface models reconstructed. Structural labels indicating nuclei, tracts, and other neuroanatomical features were incorporated into coronally sliced cryosection images spaced at 500 μ m. Labels applied to the images used the abbreviations found in the Winters, Kado, and Adey (1969) atlas. The CT, PET, and MRI data sets were reconstructed into a digital volume and co-registered (CT and MRI by landmark matching and fiducials, PET by an automated ratio method) to the cryosection volume.

MRI

MRI was performed on a GE 1.5 Tesla Signa scanner. Both T1-weighted (TR=600, TE=11) and T2-weighted (TR=3000, TE=80) scans were performed. Fifteen MR images were collected through the specimen's head with an interslice distance of 4mm, and a calculated in-plane resolution of 3mm.

CT

CT was performed on a General Electric (GE) High Light Advantage scanner. Fifty three slices were obtained with an interslice distance of 1mm, and calculated in-plane resolution of 1mm.

PET

PET was performed by intravenous injection of [18 F] -deoxyglucose on a Siemens 831 tomographic system. Thirty slices were produced with an interslice distance of 2mm and an in-plane resolution near 6mm.