

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

Rat Atlas

A three dimensional (3D) computerized map of rat brain anatomy was generated using six male Sprague-Dawley rats, weighing 270-320 g. Their heads were frozen and closely spaced cryosectional images were digitally captured every 50 microns at 1024 x 1024 resolution. Each serial data set was organized into a digital volume, re-oriented into a flat skull position, and brought into register with each other. A volume representative of the group following registration was chosen based on its anatomic correspondence with the other specimens as measured by image correlation coefficients and landmark matching. Mean positions of lambda, bregma and the interaural plane of the group within the common coordinate system were used to transform the representative volume into a 3D map of rat neuroanatomy.

The LONI Rat Brain Atlas is available in 2 ways - as an interactive web Java applet showing 2D slices of the atlas in axial, sagittal and coronal views, or as a downloadable 3D stereotactic brain atlas in Analyze, Mnc and Nifti file formats. The dimensions of the atlas are 1024x1024y21z and its resolution is (0.05, 0.05, 2.5) mm³.