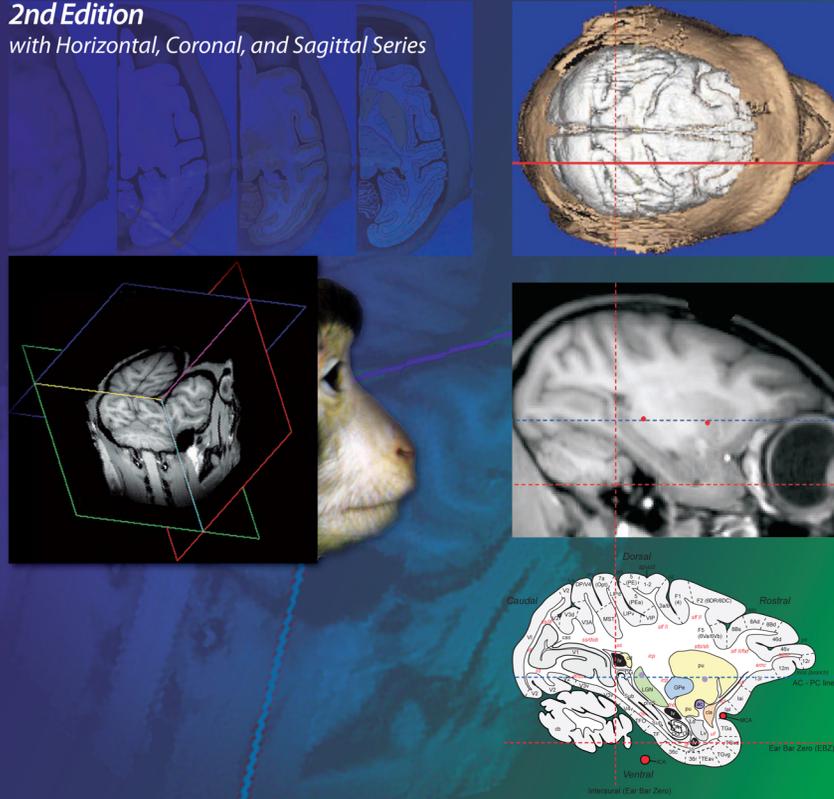


A Combined MRI and Histology

Atlas of the Rhesus Monkey Brain

in Stereotaxic Coordinates

2nd Edition
with Horizontal, Coronal, and Sagittal Series



Kadharbatcha S. Saleem • Nikos K. Logothetis



The second edition of the atlas maps the detailed architectonic subdivisions of the cortical and subcortical areas in the macaque monkey brain using high-resolution magnetic resonance (MR) images and the corresponding histology sections in the same animal. This edition of the atlas is unlike anything else available as it includes the detailed cyto- and chemoarchitectonic delineations of the brain areas in all three planes of sections (horizontal, coronal, and sagittal) that are derived from the same animal. This is a significant progress because in functional imaging studies, such as fMRI, both the horizontal and sagittal planes of sections are often the preferred planes given that multiple functionally active regions can be visualized simultaneously in a single horizontal or sagittal section. This combined MRI and histology atlas is designed to provide an easy-to-use reference for anatomical and physiological studies in macaque monkeys, and in functional-imaging studies in human and non-human primates using fMRI and PET.

THE KEY FEATURES OF THE SECOND EDITION

- The first rhesus monkey brain atlas with horizontal, coronal, and sagittal planes of sections, derived from the same animal.
- Shows the first detailed delineations of the cortical and subcortical areas in horizontal, coronal, and sagittal planes of sections in the same animal using different staining methods.
- **Horizontal series** illustrates the dorsoventral extent of the left hemisphere in 47 horizontal MRI and photomicrographic sections matched with 47 detailed diagrams (Chapter 3).
- **Coronal series** presents the full rostrocaudal extent of the right hemisphere in 76 coronal MRI and photomicrographic sections, with 76 corresponding drawings (Chapter 4).
- **Sagittal series** shows the complete mediolateral extent of the left hemisphere in 30 sagittal MRI sections, with 30 corresponding drawings (Chapter 5). The sagittal series also illustrates the location of different fiber tracts in the white matter.
- **Individual variability** - provides selected cortical and subcortical areas in three-dimensional MRI (horizontal, coronal, and sagittal MRI planes). For comparison, it also provides similar areas in coronal MRI sections in six other monkeys (Chapter 6).
- **Vasculature** - This edition maps the corresponding location of all major blood vessels in horizontal, coronal, and sagittal series of sections.
- Provides updated information on the cortical and subcortical areas, such as architectonic areas and nomenclature, with references, in chapter 2.
- Illustrates the stereotaxic grid derived from the in-vivo MR image, so it is free from shrinkage.

PRAISE FOR THE SECOND EDITION

"This 2nd edition of Saleem and Logothetis's atlas of the rhesus monkey brain in stereotaxic coordinates far surpasses their path-breaking 1st edition, which showed not only the cytoarchitectural divisions of the cortex but also its chemoarchitecture and MR images in both coronal and horizontal sections. Added now are a sagittal series through the same brain, as well as fiber tracts, blood vessels, and MRI sections of several other monkeys to illustrate individual variation. Whether or not you have the 1st edition, the splendid 2nd is a must."

—Dr. Mortimer Mishkin, *Lab Neuropsychol, National Institute of Mental Health (NIMH-NIH)*

The second edition of this beautifully detailed atlas of the macaque monkey brain has built on the quality of the first edition to provide an even more useful and impressive reference. The addition of sagittal sections, in addition to coronal and horizontal sections, and the indication from MRI sections of variability between individuals give the atlas further depth. The indication of major blood vessels should also be very useful to anyone doing neurosurgery on monkeys. An excellent atlas has become still better.

—Dr. Joseph L. Price, *Washington University in St. Louis*

This new edition is awesome. It is a "must have" for any neuroscientist doing monkey research.

—Dr. Leslie G. Ungerleider, *NIMH-NIH*