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Data Article

Data showing the shapes of cones and Müller cells within the fovea of monkeys reconstructed from serial sections and focused ion beam analysis



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ABSTRACT

The data presented in this article are related to the research paper entitled “The anatomy of the foveola reinvestigated” (Tschulakow et al., 2018) [1]. Here we show the original aligned serial sections through the foveal centre of monkeys at different planes of section and 3 D models of central foveal cells.

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Specifications Table

Subject area	Biology, Medicine
More specific subject area	Anatomy of the foveola
Type of data	Images, videos

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How data was acquired	<i>Semithin serial sections from monkey foveae were photographed under a light microscope and aligned by Amira software</i>
Data format	<i>Images were aligned, analysed and processed to form 3D models. Image stacks and videos were annotated.</i>
Experimental factors	<i>Foveae from monkeys were fixed with 5% glutaraldehyde, embedded in Epon</i>
Experimental features	<i>Foveae were serial sectioned in different planes of section with an ultramicrotome</i>
Data source location	<i>Münster (Germany), Strasbourg (France)</i>
Data accessibility	<i>With this data paper</i>
Related research article	<i>A.V. Tschulakow, T. Oltrup, T. Bende, S. Schmelzle, U. Schraermeyer, The anatomy of the foveola reinvestigated. (PeerJ. 2018;6:e4482).</i>

Value of the data

- These data show serial sections through foveal cones and Müller cells of monkeys (*Macaca fascicularis*).
 - The data are valuable for scientists investigating specific features of the macula or fovea in vivo or with histology.
 - The data may be helpful for ophthalmologists investigating the pathogenesis of macular telangiectasia type 2.
 - The data are helpful for researchers in the field of Müller glial cells.
 - The data are valuable for scientists investigating the Stiles-Crawford effect.
 - The data help in understanding properties of ocular coherence images of the fovea.
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1. Data

These data show 21 serial sections through the cones within the foveola of monkeys. The plane of section is parallel to the optic axis. The sections are made at a distance approximately 150 μm from the centre of the foveola. The serial sections are mounted to a video (**Video 1**).

Video 2: Here the curved nature of cone inner segments (green) is shown. The outer limiting membrane is labelled dark blue and the nuclear part of the cones light blue. The outer segments (yellow) could only be partly reconstructed because they do not fully fit into this stack of sections. Some outer segments run parallel to the surface of the retinal pigment epithelium (pink).

A second series of data comprises 148 sections which run perpendicular to the optic axis. **Section 1** is at the level of the retinal pigment epithelium and the series ends within the nuclear layer of the cones (**Fig. 1**).

Supplementary material related to this article can be found online at [doi:10.1016/j.dib.2018.08.195](https://doi.org/10.1016/j.dib.2018.08.195).

A third series of data consists of 49 sections through the retina within the centre of the foveola of a monkey. The plane of section is perpendicular to the optic axis. The series begins at the level of the outer limiting membrane and ends within the nuclear layer of cones (**Fig. 2**).

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