

ABSTRACT

Responses of the Posterior Accessory Optic
Tract to Photic Stimulation of the Retina
and Electrical Stimulation of the Optic
Nerve in Rabbit

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The posterior accessory optic tract (tractus peduncularis transversus of von Gudden) has often been investigated histologically but never electrophysiologically.

Anatomically we find this tract accompanies the primary visual fibers to the region of the lateral geniculate body. Leaving the main tract it courses caudally to the anterior edge of the superior colliculus whence it passes laterally over the cerebral peduncle to end in the nucleus of the posterior accessory optic tract.

Photic stimulation of the contralateral retina, which gives the usual on-off response from the optic nerve, yields essentially an on response from the nucleus.

Electrical stimulation of the optic nerve or chiasma gives a response in the nucleus but stimulation of the nucleus gives no response in the optic nerve. This and other physiological evidence leads to the conclusion that there is a cell station between the chiasma and the nucleus which is not in the lateral geniculate body. Hence the nucleus of the posterior accessory optic tract has a centripetal and not a centrifugal function.