

**Abstract View****SYNAPTIC AND NEUROCHEMICAL ANALYSIS OF THE KONIOCELLULAR PATHWAY WITHIN THE CYTOCHROME OXIDASE BLOBS OF SQUIRREL MONKEY VISUAL CORTEX.**

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Evidence establishes the K pathway from the lateral geniculate nucleus (LGN) as a third channel to primary visual cortex (V1) in primates. The direct projection of the K pathway to the CO blobs of layer III of V1 has suggested that the K pathway is involved in processing chromatic signals given evidence that the CO blobs of diurnal squirrel monkeys contain a high proportion of cells selective for color. However, primates such as nocturnal owl monkeys have well developed K LGN layers and CO blobs yet have only a single cone type and likely either lack or have only rudimentary color vision. To investigate if differences exist in the synaptic circuitry related to the K pathway within the CO blobs of squirrel monkeys and owl monkeys we labeled presynaptic K axons with WGA-HRP and examined the neurochemical content of pre- and postsynaptic profiles by postembedding immunocytochemistry for GABA and glutamate. Compared to previous findings in owl monkeys, our results indicate that the synaptic circuitries of these two primate species are quite similar. In both species K axons have small terminal boutons that contain glutamate and typically make single synaptic contacts on small glutamatergic dendrites or spines. In both species 1/4 of synapses are made with GABAergic dendrites. These preliminary results suggest that the basic circuitry related to the K pathway within the CO blobs is quite similar across primates and that if differences exist that relate to color vision they either involve aspects of the circuitry not examined (e.g., receptors) or occur earlier in the pathway.

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