

Neuropeptide-Y like immunoreactive elements in the retina of the spadefoot toad (*Pelobates fuscus*)

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In retinal research, experimental animals were *Xenopus*, *Rana* and *Bufo*. Little is known from species of other genera. Spadefoot toad (*Pelobates fuscus*) is a fossorial species which is active mostly at night. One expectation may be that the difference in behaviour can be connected with unusual features of retinal organization. Hence our objective was to study the retinal structure and neurochemistry in this species. Eyecups were made and after fixation we cut 15 μm thick cross section with cryostat and utilized indirect immunofluorescence to localize neuropeptide-Y (NPY) like immunoreactive elements in the retina. We also made wholemount preparations to decide whether the NPY positive cells form a regular, irregular or random mosaic. We have observed two types of NPY-positive large amacrine cells and many strongly immunopositive centrifugal fibres in sublamina 1 of the inner plexiform layer (IPL). Both of the amacrine cells have round soma and wide dendritic field. One amacrine cell type is in the inner row of the INL and project fibres to sublamina 1 while the other is a little further above the IPL and give dendrites to sublamina 2/3. We found 964 immunopositive neurons in one retina. Distribution of the cells were even and the density of amacrines were $22/\text{mm}^2$. The results of the nearest-neighbour analysis shows that the NPY positive cell mosaic has regular spacing ($R_n=1.59$) and these neurons are evenly distributed in the whole retina. In all frog species studied to date NPY- and tyrosine hydroxylase (TH)-immunopositive elements had similar distribution. However we did not find double labeled elements in *Pelobates*, similarly to other anuran species. To reveal the connection between the TH and NPY system we currently undertake electron microscopic observations.