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**EFFECTS OF A WHOLE BODY GAMMA IRRADIATION ON GABA REPARTITION IN INFANT RATS CEREBELLUM AND HIPPOCAMPAL FORMATION.**

Thirteen-day-old rats were exposed to a single dose of 4 or 0,5 Gy of gamma at a dose rate of 0,25 Gy/min and were killed about 5h after. Fixation was achieved in situ using glutaraldehyde. For GABA immunocytochemistry transversal sections were incubated with antiserum against GABA, then with PAP and revealed with diaminobenzidine.

Proliferative layers are still observed in the infant rat cerebellum (external granular layer) and hippocampal formation ( subgranular layer of the dentate gyrus). When irradiation occurs a high percent of these two layers cells are pycnotic.

In the normal cerebellum, no immunostaining is observed in external granular layer cell bodies. The only labelled structures are few cytoplasmic expansions coming from subjacent layers. When irradiated, a strong GABA staining appears around pycnotic cells as a network with labelled meshes. GABA staining and pycnotic cells were more especially important when the irradiation increases. Further studies are needed to specify the nature of labelled meshes.

In the normal hippocampal formation, subgranular cells are not GABA stained. Staining occurs in cells which are not granule cells. They are scattered throughout cell layers of the dentate gyrus with predominance in the hilus. After irradiation, GABA repartition is not modified.

After a 4 Gy whole body gamma irradiation, the inhibitory GABA system is not injured. Other amino-acid neurotransmitters such as Glutamate could be modified.

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