



KEY WORDS

- ✓ Apoptosis
- ✓ Autophagy
- ✓ Hyperoxia
- ✓ Nesfatin-1
- ✓ Neuron protection

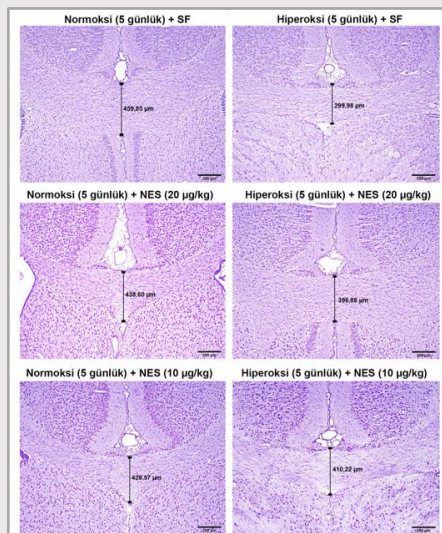
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INVESTIGATION OF THE PROTECTIVE EFFECT OF NESFATIN-1 PEPTIDE IN NEURON DEATH CAUSED BY HYPEROXIA IN NEWBORN RAT BRAIN

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GRADUATION DATE: 11.01.2024

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THESIS ABSTRACT

In this thesis study, it was aimed to show whether nesfatin-1 peptide has an effect on brain damage caused by hyperoxia in the developing rat brain and through what mechanisms it exerts this effect. According to our findings, it was observed that nesfatin-1 significantly increased the number of neurons that decreased due to hyperoxia and corrected hypomyelination. While nesfatin-1 applied during two days of hyperoxia significantly reduced the levels of autophagy markers such as beclin-1, ATG5 and LC3A-B, which increased due to hyperoxia, and the expressions of BAX and IL-18; It was found that neurotrophins such as BDNF and GDNF, whose expressions decreased with the effect of 5-day hyperoxia, and SOD and GSH-Px antioxidant enzyme levels significantly increased. As a result, it has been shown that nesfatin-1 peptide reduces brain damage caused by hyperoxia and has a protective effect on impaired cellular and molecular mechanisms.

APPLICATION AREAS OF THE THESIS RESULTS

The thesis study shows that nesfatin-1 peptide can be a neuroprotective agent for the prevention and/or treatment of hyperoxic damage that may occur in premature newborns in neonatal intensive care units and provides new information to the literature.

ACADEMIC ACTIVITIES

Halk K.Z., Yanar B., Aydın B., Gören B., Eyigör Ö., Minbay Z. (2023). Protective Effect of Nesfatin-1 Peptide Against Hyperoxia-Induced Neuron Death in the Neonatal Rat Brain. 21st National Neuroscience Congress, pp. 210. Bolu, Türkiye.

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TÜBİTAK 1001- 116S748. 2017-2019. KUAP (T)-2015/45, TGA-2022-1173 and HDP(T)-2020/26 Bursa Uludağ University BAP