# ABSTRACT

Rhabdomyosarcoma is a type of cancer that affects the development of soft tissues and is common in children. The treatment of rhabdomyosarcoma involves surgery, chemotherapy, and radiotherapy. BNCT (Boron Neutron Capture Therapy) is a type of radiotherapy that involves boron compounds irradiated with neutron beams. BNCT has shown positive results for head and neck cancer therapy. This study aims to analyze the effect of varying boron concentrations used and to determine the irradiation time for therapy. The method used is Monte Carlo simulation on a head-neck phantom of a 10-year-old child and a BNCT collimator with varying boron concentrations of 50 μg/g, 55 μg/g, 60 μg/g, 65 μg/g, and 70 μg/g. The results show that a boron concentration of 70 μg/g produces a high dose rate, short irradiation time, and the absorbed dose received by the OAR (Organ at Risk) is below the threshold for deterministic effects. Additionally, the irradiation time obtained from this concentration is 296.33 s.

**Kata Kunci** : BNCT, head and neck rhabdomyosarcoma, MCNP 6.2