ANALYSIS OF HEAVY METAL MERCURY (Hg) IN FACIAL WHITENING CREAM SOLD IN ONLINE STORES USING GRAPHITE FURNACE ATOMIC ABSORPTION SPECTROMETRY WITH MERCURY VAPORIZER UNIT (MVU)

Finska Aulya Shabrina Putri, Riska Yudhistia Asworo
Departement of Pharmaceutical and Food Analysis, Poltekkes Kemenkes Malang
**Email: finskaaulia@gmail.com*

ABSTRACT

Background: *Mercury is a hazardous heavy metal compound whose use is restricted in cosmetics according to BPOM RI Regulation No. 16 of 2024. However, the misuse of mercury as an active ingredient, particularly as a skin brightener in whitening creams, is still widespread. Continuous use of mercury containing creams can cause side effects, including the risk of skin cancer. Therefore, mercury testing in whitening creams is necessary. The mercury testing was conducted using the flameless AAS method with an MVU.* ***Objective:*** *To determine the concentration of mercury as a heavy metal in facial whitening cream samples sold in online stores using the flameless AAS instrument with an MVU and to compare the concentration levels with the requirements set by BPOM RI Regulation No. 16 of 2024.* ***Research method:*** *This study was conducted quantitatively using a wet digestion method and a flameless Atomic Absorption Spectrometer (Graphite Furnace Atomic Absorption Spectrometer/GFAAS) with the assistance of a Mercury Vaporizer Unit (MVU).* ***Results of the study:*** *In this study, the mercury content levels in all samples A1, A2, B1, B2, C1, and C2 were found to be zero or absent. This is because the absorbance values obtained were negative, indicating that the mercury (Hg) levels were too low to be detected by the accurate instrument, the Mercury Vaporizer Unit (MVU).* ***Conclusion:*** *Based on the average mercury concentrations in the tested whitening cream samples, all six samples were found to contain no detectable mercury. These cream samples comply with the requirements set by BPOM RI Regulation No. 16 of 2024 regarding Contaminant Limits in Cosmetics.*

Key words: *Mercury, Face Whitening Cream, Flameless Atomic Absorption Spectrometry, MVU*