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강연제목: 인공지능 기반 염색체 분석 자동화 시스템/
AI-based automated chromosome analysis system

Abstract:

Biological dosimetry allows estimation of radiation exposure by analyzing chromosomes, without the need for physical dosimeters. Radiation damages DNA, causing chromosome abnormalities proportional to the exposure dose. By comparing abnormal to normal chromosomes, the exposure level can be estimated. However, manual analysis by experts is time-consuming and costly, highlighting the need for automation. While deep learning has been applied to various problems, its use in chromosome abnormality analysis remains limited. Therefore, this study aims to apply deep learning to detect and count abnormalities in all chromosomes, using FISH-stained images. We address challenges such as limited and low-quality data through preprocessing and data augmentation, and propose a new evaluation metric for comprehensive chromosome detection within images.

Brief Biosketch

Education

Ph.D., Biomedical Engineering (Field: Medical image artificial intelligence)
Mar. 2019 ~ Feb. 2024, Yonsei University (Mirae), Korea.
B.S., Biomedical Engineering
Mar. 2012 ~ Feb. 2019, Yonsei University (Mirae), Korea

Experience

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