

## Protein expression patterns in HEK-blue-cells treated with *Clinacanthus nutans* extracts

### ABSTRACT

**Background:** *Clinacanthus nutans* (CN) is a small shrub native to tropical Asia known for their anti-oxidant, anti-inflammation, anti-cancer, and anti-viral activities. **Objectives:** This study aimed to investigate the effect of CN extract on human embryonic kidney cell line (HEK-Blue<sup>TM</sup>-4) in a proteomic perspective. **Materials and Methods:** Comparative proteomic profiling through two-dimensional sodium dodecyl sulfate gel electrophoresis was performed on HEK-Blue<sup>TM</sup>-4 treated with CN leaf polar extract. **Results:** We successfully identified seven upregulated proteins, of which five promoted the growth of the HEK-Blue<sup>TM</sup>-4 cells. Interestingly, a potent antioxidant enzyme which neutralizes reactive oxygen or nitrogen species, peroxiredoxin-1 was also upregulated in HEK-Blue<sup>TM</sup>-4 cell lines after treatment with CN leaf polar extract. **Conclusion:** CN leaf polar extract promotes the growth of HEK-Blue<sup>TM</sup>-4 cells and induced the expression of peroxiredoxin-1, which protects the cells from reactive oxygen species during the inflammation process.

**Keyword:** Anti-inflammatory; *Clinacanthus nutans* ; Comparative proteomic; HEK-Blue<sup>TM</sup>-4 cell line; Two-dimensional sodium dodecyl sulfate gel electrophoresis