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## In vitro evaluation of hypocrellin B based-photodynamic therapy on human oesophageal cancer HKESC-1 cells

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**Background:** Oesophageal cancer is a malignant disease that accounts for the seventh major cause of cancer-associated death worldwide. Hypocrellin B, a natural photosensitizer, has been employed for photodynamic therapy for various neoplastic diseases. However, studies that utilize hypocrellin B-based- photodynamic therapy on oesophageal cancer are limited. This current study examined the in vitro effects of hypocrellin B-based-photodynamic therapy on human oesophageal cancer cells.

**Materials and methods:** Human oesophageal cancer HKESC-1 cells were grouped into non-photodynamic and photodynamic therapy groups. Both groups were treated with varying concentrations of hypocrellin B. After four hours, the photodynamic therapy category was irradiated at a fluency of 5 J/cm<sup>2</sup> and a wavelength of 470nm. Twenty-four-hour post-irradiation cell viability, lactate dehydrogenase (LDH) release and damage to the mitochondrial and nuclear morphological assessments were performed.

**Results:** Treatment with hypocrellin B-mediated photodynamic therapy significantly reduced the amount of ATP/viability of HKESC-1 cells, and the amount of LDH released was notably higher in the photodynamic therapy group. Mitochondrial membrane potential was impaired, and nuclear condensation was markedly observed in the hypocrellin B-mediated photodynamic therapy.

**Conclusion:** Hypocrellin-B mediated photodynamic therapy demonstrated remarkable anticancer activities in oesophageal cancer HKESC-1 cells.

### Apply for student award at which level:

None

### Consent on use of personal information: Abstract Submission

Yes, I ACCEPT

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