HKU Faculty of Dentistry researchers kill fungus with light

Using a specially designed chemical compound, a joint research team from The University of Hong Kong and the Chinese University of Hong Kong has been able to kill a common fungus with light.

The research team, which included Prof Lakshman Samaranayake, Dr Paul Tsang, and Dr CJ Seneviratne from the HKU Faculty of Dentistry, first allowed a new light-sensitive chemical (a bisamino-phthalocyanine) to enter cells of the fungus *Candida albicans*. Red light from a medical laser of 675-nm bandwidth was used to activate the chemical, which generated toxic oxygen-related molecules (reactive oxygen species) inside the cells, subsequently killing them. The amount of cell death depended on the amount of chemical used, and neither the laser nor the light-sensitive chemical alone had any effect.

Given that the fungus *Candida albicans* commonly causes human disease and its resistance to conventional antifungal drugs is rising, the authors suggest that their new light-sensitive chemical compound has “potential clinical value”.

The research was published in the international peer-reviewed journal *Mycoses* earlier this year.

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