

# Hope for chronic obstructive pulmonary disease

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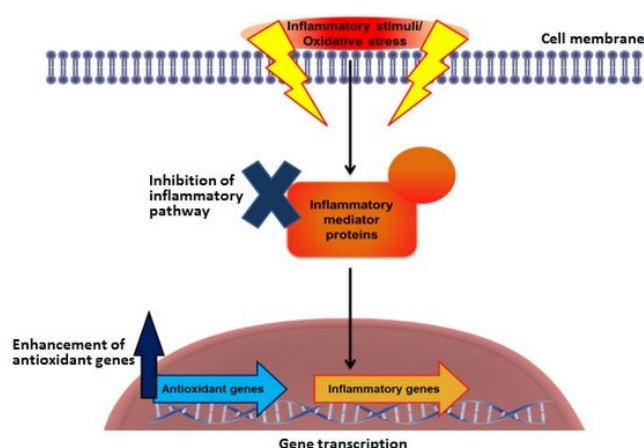
Polyphenols of various chemical structures found in grapes can have anti-inflammatory activity but it is challenging to find one that is effective as a drug. Prof Lin and co-workers have successfully identified a polyphenol that can potentially be developed into a drug for lung inflammation caused by COPD. Credit: Pixabay

NUS pharmaceutical scientists have discovered that a naturally-derived compound is a potential drug candidate for chronic obstructive pulmonary disease (COPD).

COPD is an increasingly common type of lung inflammatory disease which is associated with a high mortality rate. It is a progressive disease that worsens with time if not treated properly. Researchers are seeking an effective anti-inflammatory agent that can halt the progression of this [disease](#). Prof LIN Haishu and his team from the Department of Pharmacy, NUS, together with researchers from the Imperial College London, UK, have identified a promising grape polyphenol, known as isorhapontigenin, that can suppress [lung inflammation](#) caused by COPD. Additionally, this compound can be easily absorbed when taken orally.

Previous studies have shown that resveratrol, a molecule commonly found in red wine, displays anti-inflammatory activity, but it is not suitable as a therapeutic agent due to its poor potency and pharmacokinetics. Other similar molecules closely associated with resveratrol have been shown to have better pharmacological properties. Prof Lin and his Ph.D. student, YEO Chao Ming Samuel, used a variety of molecular and analytical techniques to investigate the medicinal properties of several of these naturally-derived [compounds](#). They identified isorhapontigenin as a promising candidate with the potential to be developed into a drug to treat COPD.

Prof Lin said, "Corticosteroids, which are commonly used for reducing inflammation, are not effective in COPD patients. This compound, isorhapontigenin, uses a biological pathway that is different from corticosteroids to inhibit the release of inflammatory mediators in the body to tackle lung inflammation caused by COPD." Moving ahead, the team plans to further evaluate the therapeutic potential of isorhapontigenin using in vivo studies.



Schematic summarising the effects of isorhapontigenin on intracellular inflammatory pathways. Credit: Yeo Chao Ming Samuel

Provided by National University of Singapore

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