

Asbestosis toxicity study identifies potential of novel mineral treatment

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Asbestos has been recognized as a human carcinogen since 1955 but as of March 2019 had been banned in only 66/195 countries. Credit: Kerbla Edzerdla

Asbestos-related cancers include lung cancer and malignant mesothelioma (MM) for which there is no cure. Most patients with MM

die within two years of diagnosis and despite the banning of asbestos in many countries MM related deaths are predicted to rise in both industrialised and developing countries.

A University of Technology Sydney (UTS) led [pilot study](#) found that the zeolite clinoptilolite reduced asbestos-induced cellular damage in [cell lines](#) (in vitro) and significantly reduced MM development in mouse models (in vivo).

Clinoptilolite is a naturally occurring mineral used for a variety of purposes including as an odour absorber and as both a food and feed additive. The mineral has GRAS status under the USFDA.

The research team also included scientists from the University of Otago, University of Western Australia, University of Sydney and Medical University of Vienna. The results are published in the journal *FASEB BioAdvances*.

Chief Investigator, UTS Associate Professor Tony George said that the research tested the theory that the metal-binding properties of zeolites would trap iron molecules released from asbestos fibres and thus "reduce asbestosis toxicity".

"This is the first report of success in delaying or preventing MM in an [animal model](#)," he said.

The scientists say that new treatments for MM and asbestosis have been slow to progress and is a factor in underlining the potential of the current study.

"The study is preliminary data only and the team recognises the difficulty in reproducing animal studies in humans. However, we expect that due to the incurable nature of MM, we might be able to fast-track a

Phase I trial."

More information: *FASEB BioAdvances*, [DOI: 10.1096/fba2.1079](https://doi.org/10.1096/fba2.1079)

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