

More accurate biomarkers needed to ensure melanomas are spotted

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Credit: AI-generated image ([disclaimer](#))

New biomarkers to improve skin cancer detection and avoid delays in treatment are being developed by researchers at the University of South Australia.

Every 30 minutes, an Australian is diagnosed with melanoma, the most

aggressive form of [skin cancer](#). Fortunately, 98% can be successfully treated if the cancer is caught early, but what happens when it's not?

Thousands of [skin lesions](#) are misdiagnosed each year, delaying treatment, and putting lives at risk, says UniSA Ph.D. candidate Giang Lam in a new paper published in *Molecular Diagnosis and Therapy*.

"Melanomas exhibit a wide range of sizes, shapes and growth, which can resemble numerous benign and other malignant skin lesions," Giang says.

"It can make accurate detection difficult, even for expert dermatologists and pathologists. The current markers used in [clinical practice](#) to identify [cancerous cells](#) and distinguish them from normal cells are not always sensitive or specific. Melanomas are sometimes missed, and this can have fatal consequences."

Giang, and supervisor Dr. Jessica Logan, a Research Fellow in UniSA's Clinical and Health Sciences unit, are identifying new detection methods based on abnormal markers in the endosomal system, which flags melanoma growth.

"With melanomas, this system is hyperactivated and plays an important part in initiating melanomas and encouraging their growth. By developing markers that can label these cells in a dark brown color, it will allow pathologists to be 100% accurate."

Melanoma accounts for most skin cancer-related mortalities globally, responsible for almost 325,000 cases in 2020 and more than 57,000 deaths. Australia has the highest incidence of skin cancer in the world, recording an average of four deaths each day.

"Our research at UniSA is primarily focused on developing more

effective biomarkers for [melanoma](#) but also understanding how the disease progresses and the multiple causes," Dr. Logan says.

"The sun and subsequent UV damage are mainly responsible for causing skin cancer, so wearing sunscreen and getting regular skin checks is a must, but genetics also plays a role. If some of your [family members](#) have skin cancer, you also have a higher chance of getting the disease."

The researchers hope to progress to biomarker [clinical trials](#) within the next few years.

More information: Giang T. Lam et al, Pitfalls in Cutaneous Melanoma Diagnosis and the Need for New Reliable Markers, *Molecular Diagnosis & Therapy* (2022). [DOI: 10.1007/s40291-022-00628-9](https://doi.org/10.1007/s40291-022-00628-9)

Provided by University of South Australia

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