



A solution that's close to the heart

Medicinal plants should be considered for designing treatments for heart disease

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Medicinal plants could be used to design affordable treatments for cardiovascular diseases.

People in low- and middle-income countries, such as South Africa, are still faced with a high number of deaths due to cardiovascular diseases (CVDs), such as atherosclerosis, heart failure, hypertension and strokes.

This is because most people in these communities do not have access to, nor can they afford, expensive Western (synthetic) medicine. As a result, for ages, humans have been using medicinal plants for healthcare purposes, and this has had a positive effect in treating these illnesses. However, there is still insufficient scientific data to confirm their efficiency.

Currently, scientist researchers are focusing on biological

biomarkers that play a key role in the development of atherosclerosis, such as Cathepsin S proteins, which are sparsely expressed in the arteries of healthy individuals but highly expressed in diseased individuals. Thus the search for new drug agents to inhibit Cathepsin S has been implemented through the screening of phytochemicals, based on their ethnobotanical data.

"Medicinal plants were widely attributed to be therapeutic tools for several critical diseases in the previous century. Thus most of our effective drugs are extracted from medicinal plants," says Sanele Khoza.

For instance, approximately 64% of hypertension drugs are

initially isolated from medicinal plants, and have shown outstanding results compared with those of synthetic drugs for maintaining healthy blood pressure levels.

Moreover, scientists have shown the important role of determining the pharmacokinetics, medicinal chemistry and drug-likeness of the phytochemical from the first step of the drug discovery. This has helped in avoiding drugs being rejected at the clinical phase or, even worse, being taken out of the market.

"It is critical that scientists investigate the compatibility of natural plants as suitable therapeutic agents and active drugs for the treatment of CVDs."

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