

Pharmacognosy and Medicinal Plants

CATECHIN FROM PINE NEEDLE ACT AS AN ANTI-HYPERTENSION AGENT

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Hypertension has been acknowledged as one of the highest risk factors leading to cardiovascular diseases (CVD). Angiotensin-converting enzyme (ACE) has been demonstrated as the therapeutic target for hypertension-based CVD treatment. Anti-hypertension bioactivity ingredients screening and development has become a pharmaceutical treatment for the CVD. Many kinds of herbal, such as pine needle, a traditional Chinese medicine, have been used for the treatment of hypertension since ancient, but the bioactive agent which is responsible for its therapeutic effectiveness remain unclear. Therefore, screening bioactive chemicals from natural sources is still the most straightforward strategy for novel ACE inhibitor-based anti-hypertension agent discovery. In

this study, we demonstrated a bioactivity-guided fractionation strategy for identifying bioactive fractions and chemicals from pine needle based on LC/MS assay as well as elucidating their mechanisms of pharmacological activity. The compound in pine needle extracts being ACE-inhibitory active was found to be catechin. When ACE activity was assayed in rat tissue membranes, it was observed that catechin demonstrate ACE inhibition in kidney, lung and testes tissue. These observations indicate that catechin in pine needle could be a potential cardiovascular medicine.

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