

## ABSTRACT

### *LIVISTONA CHINENSIS* SEED EXTRACT INHIBITS ANGIOGENESIS IN VARIOUS MODEL SYSTEMS: CHARACTERIZATION AND POSSIBLE MECHANISMS

Angiogenesis, the sprouting of new blood vessels, is a tightly regulated process that is critical for many physiological and developmental processes. When aberrantly regulated, angiogenesis contributes to numerous medical pathologies, including cancer and metastasis. For centuries the Chinese have been using extracts of the Chinese Fan Palm (*Livistona chinensis*) for cancer therapy; and previous work suggests that the effect is anti-angiogenic. We tested the plant's ability to produce a naturally occurring anti-angiogenic compound using liquid chromatography to separate the seed extract into more constituent fractions. We tested the anti-angiogenic properties with enzymatic assays, and *in vitro*, *ex vivo*, and *in vivo* angiogenesis screens. Fraction 30 had an 89% maximum efficacy in inhibiting angiogenesis *in vivo*. Finally, we used liquid chromatography/mass spectrometry to examine the active component of the extract in atomic detail. Our results suggest the presence of a small, non-toxic molecule in fraction 30 with anti-angiogenic and anti-cancer properties.

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