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Anti-Oxidant and Anti-Inflammatory Complex Health Functional Analysis of Chinese Resource Plant Boehmeria, Carlemannia and Clausena

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Ageing has been known to be deeply related to oxidative activities. Furthermore, inflammation is a response initiated by conditions such as infection and injury. It has been known that complex connections occur between oxidative stress and the inflammatory response, however underlying mechanism needs to be investigated. Chinese resource plants have been widely used as functional food and medicine for a long time, however it is not studied well how many of these resource plants work. We first decided testing anti-oxidant and anti-inflammatory activities with 95% ethanol extracts of the chinese resource plants, Boehmeria pilosinscula (Blume) Hassk., Carlemannia tetragona Hook f. and Clausena emarginata C.C.Huang. To measure anti-oxidant activity, we performed DPPH assay in Raw264.7 cells with 95% ethanol extracts. Clausena extracts showed significantly higher anti-oxidant activity than those of Boehmeria and Carlemannia.

We then performed Nitric Oxide assay to measure the inflammation suppression levels with 95% ethanol extracts of these plants. Clausena extracts showed significantly higher suppression of nitric oxide production than those of Boehmeria and Carlemannia. This indicates that inflammation levels are significantly reduced by Clausena.

After measuring anti-oxidant and anti-inflammatory activities, we then performed MTT assay to measure the cell survival rate of Raw264.7 cells treated with these extracts. Boehmeria showed much more cell survival rate than Carlemannia and Clausena.

Taken together, this result suggests that Clausena extracts have more anti-oxidant and anti-inflammatory activities than Boehmeria and Carlemannia, while Boehmeria extracts have more cell survival rate than Carlemannia and Clausena.

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