

Inhibition Effects of *Persicaria amphibia* (L.) Delarbre on Oxidative DNA Damage via ATM/Chk2/p53 pathway

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Persicaria amphibia as an England native plant, is a rhizomatous perennial, one of the rather amphibious plants. Its aquatic form contains water-soluble sugars, starch, and protein. *P. amphibia* have up to 18% tannins in stems and rhizomes. Previous studies have confirmed the anti-inflammatory activity of live bacteria roots, but no studies on bioactivity are known. DNA damage responses (DDR) pathways are considered a crucial factor affecting the alleviation of cellular damage. The ataxia-telangiectasia mutated and Rad3 related (ATM) and checkpoint kinase 2 (Chk2) pathways are the main pathways of DNA damage response. Also, p53 is a key integrator of cellular response to oxidative DNA damage, contributing repair, or leading transcription including apoptosis. In the present study, we conducted an investigation into the inhibitory effects of *P. amphibia* on oxidative DNA damage for confirming potential to complementary medicine and therapies. In conclusion, *P. amphibia* can provide protective effects against double-stranded DNA break (DSB) caused by oxidative DNA damage.

Key words: DNA damage, Double-stranded DNA break, p53, *Persicaria amphibia*

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