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The traditional uses, phytochemistry, and pharmacology of *Atractylodes macrocephala* Koidz.: A review

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ABSTRACT

Ethnopharmacological relevance

Atractylodes macrocephala Koidz. (called *Baizhu* in China) is a medicinal plant that has long been used as a tonic agent in various ethno-medical systems in East Asia, especially in China, for the treatment of gastrointestinal dysfunction, cancer, osteoporosis, obesity, and fetal irritability.

Aim of the review: This review aims to provide a systematic summary on the botany, traditional uses, phytochemistry, pharmacology, pharmacokinetics, and toxicology of *A. macrocephala* to explore the future therapeutic potential and scientific potential of this plant.

Materials and methods

A literature search was performed on *A. macrocephala* using scientific databases including Web of Science, Google Scholar, Baidu Scholar, Springer, PubMed, SciFinder, and ScienceDirect. Information was also collected from classic books of Chinese herbal medicine, PhD and MSc dissertations, unpublished materials, and local conference papers on toxicology. Plant taxonomy was confirmed to the database “The Plant List” (www.theplantlist.org).

Results

More than 79 chemical compounds have been isolated from *A. macrocephala*, including sesquiterpenoids, triterpenoids, polyacetylenes, coumarins, phenylpropanoids, flavonoids and flavonoid glycosides, steroids, benzoquinones, and polysaccharides. Crude extracts and pure compounds of *A. macrocephala* are used to treat gastrointestinal hypofunction, cancer, arthritis, osteoporosis, splenic asthenia, abnormal fetal movement, Alzheimer disease, and obesity. These extracts have various pharmacological effects, including anti-tumor activity, anti-inflammatory activity, anti-aging activity, anti-oxidative activity, anti-osteoporotic activity, neuroprotective activity, and immunomodulatory activity, as well as improving gastrointestinal function and gonadal hormone regulation.

Conclusions

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