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Review Article

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A Review of pharmacologically evaluated medicinal herbs for its antinociceptive and analgesic potentials

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Abstract

Pain management is a significant global health concern. There is always a significant variability in the creation of novel pain management drugs. Many herbal remedies have been recommended for the treatment of pain since ancient medical texts from thousands of years ago. Despite the widespread belief that herbal remedies are harmless, pharmaceuticals must always undergo scientific validation in order to be guaranteed to be both safe and effective. This review aims to assist in the extraction of different metabolites from plant sources that will facilitate the development of novel analgesic medications. It includes a summary of the research that has been done on the beneficial antinociceptive and analgesic properties of nearly forty herbals, such as *Achyranthes aspera*, *Alpinia galangal*, *Costus speciosus*, *Glycyrrhiza glabra*, *Delonix elata*, *Calotropis procera*, *Sesamum indicum*, *Cissus quadrangularis*, *Croton tiglium*, *Jatropha curcas* etc.,

Keywords: Anti-nociceptive, herbs, Herbal, Traditional medicine, Pain killer, Analgesic.

Introduction

There is still much to learn about the potential of higher plants as sources of novel medications. Finding novel, pharmacologically active compounds in plants has produced a wealth of clinically effective medications that are vital to the treatment of human illness. Despite recent advancements in therapeutic development, the medical community still desperately needs strong and efficient analgesics, particularly for chronic pain. The contribution of higher plants to the creation of contemporary analgesic medications and to our comprehension of the intricate

processes involved in pain transmission will be the main topics of discussion in this review article. Additionally, the development of naturally occurring secondary metabolites originating from plants were highlighted.

Materials and Methods

The source of this review is based on web search in Embase, Google scholar, Pub med and books of Medicinal plants. 20 medicinal herbs with Antinociceptive potents were reviewed and analyzed.

Scientifically validated herbs in their active role of anti-nociception

Sl. No	Name of the plant	Family	Pharmacological Method of screening
1	*Achyranthes aspera*	Amaranthaceae	Tail flick test[1]
2	*Alpinia galanga*	Zingiberaceae	Acetic acid induce writhing responses in Mice[2]
3	*Clerodendrum phlomidis*	Lamiaceae	Writhing, Tail immersion and Hot plate test[3]
4	*Bryophyllum pinnatum*	Crassulaceae	The 'hot-plate' and 'acetic acid' test models of pain in mice[4].
5	*Carum copticum*	Apiaceae	Formalin test using mice model[5]
6	*Calotropis procera*	Asclepiadaceae	Acetic acid-induced abdominal constrictions, hot plate test[6]
7	*Costus speciosus*	Zingiberaceae	Formalin-induced writhing test and Tail immersion test[7]
8	*Cissus quadrangularis*	Vitaceae	Formalin-induced licking and acetic acid-induced writhing Model[8]
9	*Alocasia indica*	Araceae	Acetic acid-induced writhing response, hot plate method, tail flick method in albino rats[9].
10	*Delonix elata*	Fabaceae	Tail flick test[10]
11	*Glycyrrhiza glabra*	Fabaceae	Acetic acid induced abdominal constrictions, Formalin induced hyperalgesia and Tail flick method[11]
12	*Gynandropsis pentaphylla*	Capparidaceae	Eddy's Hot-plate method and acetic acid induced writhing[12]
13	*Hemidesmus indicus*	Apocynaceae	Acetic acid (writhing test), formalin (paw licking test) and hot plate test in mice[13].
14	*Hygrophila auriculata*	Acanthaceae	Acetic acid writhing test and in thermal methods hot plate and tail flick tests[14]
15	*Jatropha curcas*	Euphorbiaceae	Formalin-induced rat paw edema[15]

16	*Ocimum gratissimum*	Lamiaceae	Formalin induced method[16]
17	*Psidium gujava*	Myrtaceae	Acetic acid induced writhing[17]
18	*Sesamum indicum*	Pedaliaceae	Eddy's hot plate method[18]
19	*Punica granatum*	Lythraceae	hypertonic saline-induced acute corneal pain perception in mice Hypertonic saline-induced acute corneal pain perception in mice[19]
20	*Croton tiglium*	Euphorbiaceae	Writhing test in mice[20]

Results and Discussion

The medicinal herbs such as *Achyranthes aspera*, *Alpinia galangal*, *Clerodendrum phlom*idis, *Bryophyllum pinnatum*, *Carum copticum*, *Calotropis procera*, *Costus speciosus*, *Cissus quadrangularis*, *Alocasia indica*, *Delonix elata*, *Glycyrrhiza glabra*, *Gynandropsis pentaphylla*, *Hemidesmus indicus*, *Hygrophila auriculata*, *Jatropha curcas*, *Ocimum gratissimum*, *Psidium gujava*, *Sesamum indicum*, *Punica granatum*, *Croton tiglium* were screened for its anti nociception effect by various researchers in order to validate scientifically. The research findings confirms that the above mentioned plant extracts shown significant anti nociception effects in animal models.

Conclusion

The best option for obtaining potent pain relievers is to look into medicinal plants, according to scientific research findings. Research into more modern, scientifically proven medications that can effectively treat complex pain problems is desperately needed. This review aids in determining which medicinal plants have been shown to have antinociceptive properties.

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