

Medicinal plants in traumatic brain injury: Neuroprotective mechanisms revisited

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Traumatic brain injury (TBI) is the most prevalent health problem affecting all age groups, and leads to many secondary problems in other organs especially kidneys, gastrointestinal tract, and heart function. In this review, the search terms were TBI, fluid percussion injury, cold injury, weight drop impact acceleration injury, lateral fluid percussion, cortical impact injury, and blast injury. Studies with *Actaea racemosa*, *Artemisia annua*, *Aframomum melegueta*, *Carthamus tinctorius*, *Cinnamomum zeylanicum*, *Crocus sativus*, *Cnidium monnieri*, *Curcuma longa*, *Gastrodia elata*, *Malva sylvestris*, *Da Chuanxiong Formula*, *Erigeron breviscapus*, *Panax ginseng*, *Salvia tomentosa*, *Satureja khuzistanica*, *Nigella sativa*, *Drynaria fortune*, *Dracaena cochinchinensis*, *Polygonum cuspidatum*, *Rosmarinus officinalis*, *Rheum tanguticum*, *Centella asiatica*, and *Curcuma zedoaria* show a significant decrease in neuronal injury by different mechanisms such as increasing superoxide dismutase and catalase activities, suppressing nuclear factor kappa B (NF- κ B), interleukin 1 (IL-1), glial fibrillary acidic protein, and IL-6 expression. The aim of this study was to evaluate the neuroprotective effects of medicinal plants in central nervous system pathologies by reviewing the available literature. © 2019 International Union of Biochemistry and Molecular Biology

brain

medicinal plants

signaling mechanisms

TBI

trauma

Actaea racemosa extract

Aframomum melegueta extract

Artemisia annua extract

catalase

Centella asiatica extract

Cinnamomum zeylanicum extract

Cnidium monnieri extract

Crocus sativus extract

Curcuma longa extract

Curcuma zedoaria extract

da chuanxiong

Dracaena cochinchinensis extract

Drynaria fortune extract

Erigeron breviscapus extract

Gastrodia elata extract

ginseng extract

glial fibrillary acidic protein

immunoglobulin enhancer binding protein

interleukin 1

interleukin 6

Malva sylvestris extract

Nigella sativa extract

plant medicinal product

Polygonum cuspidatum extract

Rheum tanguticum extract

Rosmarinus officinalis extract

safflower extract

Salvia tomentosa extract

Satureja khuzistanica extract

superoxide dismutase

unclassified drug

catalase

glial fibrillary acidic protein

glial fibrillary astrocytic protein, mouse

immunoglobulin enhancer binding protein

interleukin 1

interleukin 6

interleukin-6, mouse

neuroprotective agent

superoxide dismutase

Actaea racemosa

Aframomum melegueta

Artemisia annua

black cumin

blast injury

Centella asiatica

Cinnamomum zeylanicum

Cnidium monnieri

cold injury

Crocus sativus

Curcuma longa

Curcuma zedoaria

cytokine release

Dracaena cochinchinensis

drug formulary

drug mechanism

Drynaria fortunei

Erigeron breviscapus

Gastrodia elata

ginseng

Malva sylvestris

medicinal plant

neuroprotection

nonhuman

Polygonum cuspidatum

priority journal

Review

Rheum tanguticum

rosemary

safflower

Salvia tomentosa

Satureja khuzistanica

traumatic brain injury

animal

blast injury

brain cortex

chemistry

cold injury

disease model

drug effect

gene expression regulation

genetics

human

injury

isolation and purification

medicinal plant

metabolism

mouse

pathology

rat

traumatic brain injury

Animals

Blast Injuries

Brain Injuries, Traumatic

Catalase

Cerebral Cortex

Cold Injury

Disease Models, Animal

Gene Expression Regulation

Glial Fibrillary Acidic Protein

Humans

Interleukin-1

Interleukin-6

Mice

Neuroprotective Agents

NF-kappa B

Plants, Medicinal

Rats

Superoxide Dismutase