

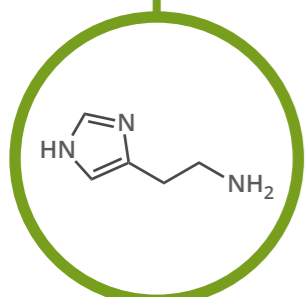
THE CHEMISTRY OF STINGING NETTLES

Stinging nettles are an unpleasant supplement to country walks. Their stings cause tingling, inflammation, and pain that can last for several hours. But what are the chemicals behind their venom, and what truth is there in some of the oft-suggested remedies to try and relieve the pain of a nettle sting?

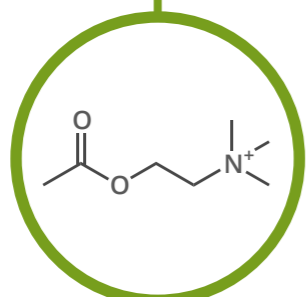
STINGING NETTLE VENOM

Stinging nettles are covered in tiny hollow hairs (trichomes). When you brush against them, you break the fragile silica tips off the hairs, and they then act like a needle, piercing the skin, and causing the nettle's venom to be injected.

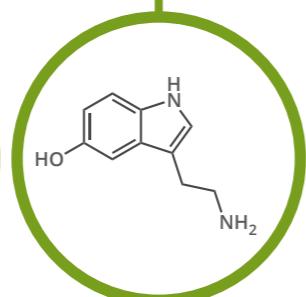
NEUROTRANSMITTERS



HISTAMINE



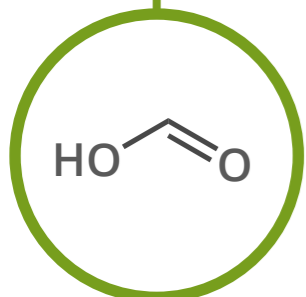
ACETYLCHOLINE



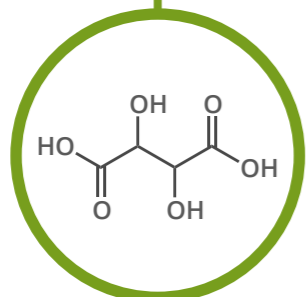
SEROTONIN

The primary source of pain from nettle stings was originally thought to be formic acid, but it is present in too low a concentration. Histamine, acetylcholine and serotonin cause inflammation & pain, whilst tartaric & oxalic acid in some nettle species have been linked with extended pain duration.

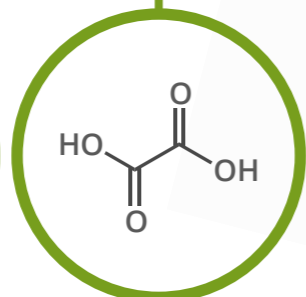
ACIDS



FORMIC ACID



TARTARIC ACID



OXALIC ACID



NETTLE STING REMEDIES

DOCK LEAVES

Dock leaves are an oft-suggested nettle sting remedy. Some incorrectly state that dock sap is alkaline, and it neutralises the acidic nettle venom. It's also claimed that dock leaves contain a natural antihistamine; there is no evidence of this. There is some evidence it could contain a chemical that reduces the effect of serotonin in the venom.



ANTIHISTAMINES

Antihistamine creams combat the action of histamine, blocking the receptors that it usually binds to. Histamine isn't the only sting component, but by preventing its action the inflammation and some of the pain from the sting can be reduced. This is likely the most effective remedy. Topical corticosteroid medications can also help prevent histamine's effects.



OTHER REMEDIES

Calamine lotion is often claimed to help, and as it has an anti-pruritic (anti-itching) effect, it may provide mild relief (though its anti-pruritic properties have been disputed). Plantain leaves and urinating on the sting are other common suggestions, though again, there is no scientific evidence that these remedies have a chemical effect.

