

The scientific basis for the reputed activity of Valerian

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The underground organs of members of the genus *Valeriana* (Valerianaceae), as well as related genera such as *Nardostachys*, are used in the traditional medicine of many cultures as mild sedatives and tranquillisers and to aid the induction of sleep. *V. officinalis* is the species most commonly used in northern Europe and still retains its official pharmacopoeial status although it is most commonly encountered as an ingredient of herbal medicines.

This plant is still the subject of considerable research aimed at establishing the chemical and pharmacological basis of the activity which has been clearly shown in a number of animal and clinical studies.

The constituents of the volatile oil are very variable due to population differences in genetics and to environmental factors. The major constituents include the monoterpene bornyl acetate and the sesquiterpene valerenic acid, which is characteristic of the species, in addition to other types of sesquiterpene. Some of these have been shown to have a direct action on the amygdaloid body of the brain and valerenic acid has been shown to inhibit enzyme-induced breakdown of GABA in the brain resulting in sedation.

The non-volatile monoterpenes known as valepotriates were first isolated in 1966 and contribute to the overall activity by possessing sedative activity based on the CNS although the mode of action is not clearly known. The valepotriates themselves act as prodrugs which are transformed into homobaldrinal which has been shown to reduce the spontaneous motility of mice.

More recent studies have shown that aqueous extracts of the roots contain appreciable amounts of GABA which could directly cause sedation but there is some controversy surrounding the bio-availability of this compound.

Another recent finding is the presence of a lignan, hydroxypinoresinol, and its ability to bind to benzodiazepine receptors.

Valerian is a good example of both the negative and positive aspects of herbal drugs. The considerable variation in its composition and content as well as the instability of some of its constituents pose serious problems for standardisation but the range of components which contribute to its overall activity suggest that it may correct a variety of underlying causes of conditions which necessitate a general sedative or tranquillising effect.