

HARIDRA (Curcuma long)

हरिद्रा काञ्चनी पीता निशाऽऽख्या वरवर्णिनी ।
कृमिघ्नी हलदी योषित्प्रिया हृद्विलासिनी ॥१९६ ॥
हरिद्रा कटुका तिक्ता रूक्षोष्णा कफपित्तनुत् ।
वर्ण्या त्वग्दोषमेहास्त्रशोथपाण्डुव्रणापहा ॥१९७ ॥

हरीतक्यादिवर्गः भावप्रकाशनिघण्टुः

What the Shlok Says

As mentioned in Bhavprakash, the Sanskrit synonyms of haridra are:

Haridra, Kanchani, Peeta, Nisha, Varvarnini, Krimighni, Haldi, Yoshitpriya and Hattvilasini.

Some of the interesting synonyms are explained below -

योषित्प्रिया (Yoshitpriya) - *The women's favourite. This is an indication of haridra being useful in Striroga like PCOS.*

वरवर्णिनी (Varvarnini) - *One with superior varna (healthy complexion). This is an indication of haridra being useful in maintaining health of the skin*

Qualities of Haridra –

Haridra is **katu** and **tikta** in taste. It is **ushna** in quality. It is **rooksha** in property. It acts **against kapha and pitta dosha**. It is helpful in improving and strengthening complexion. Haridra is useful in skin diseases, diabetes, oedema, anaemia and wound healing.

Charak says - Haridra is **lekhaneeya**, **kushthaghna** and **vishaghna**

Properties:

Rasa: Katu, Tikta

Guna: Ruksha

Virya: Ushna

Vipaka: Katu

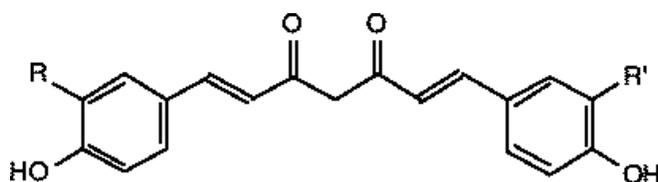
Karma: Krimighna, Kushtaghna, Varnya, Vishaghna, Kaphapittanut, Pramehanashaka

Formulations of Haridra- Haridrakhand

Therapeutic uses- Pandu, Prameha, Vrana, Vishavikara, Kushta, Tvagroga, Shitapitta, Peenasa

Active ingredient – Curcumin

Pale yellow to orange-yellow volatile oil (6%) composed of a number of monoterpenes and sesquiterpenes, including zingiberene, curcumene, α - and β - turmerone among others. The colouring principles (5%) are curcuminoids, 50–60% of which are a mixture of curcumin, monodesmethoxycurcumin and bisdesmethoxycurcumin. Representative structures of curcuminoids are presented below.



curcumin $R = OCH_3, R' = OCH_3$

desmethoxycurcumin $R = OCH_3, R' = H$

bisdesmethoxycurcumin $R = H, R' = H$

Curcumin is a diarylheptanoid. Which means it is a combination of phenyl and carbon chain compounds. Curcumin is a potent anti-inflammatory agent that can reduce inflammation and has a potential role in cancer treatment. Curcumin has been shown to reduce the transformation, proliferation and spread of tumours and it achieves this through regulation of transcription factors, inflammatory cytokines, growth factors, protein kinases and other enzymes. Curcumin prevents proliferation by interrupting the cell cycle and inducing programmed cell death. Furthermore, curcumin can inhibit the activation of carcinogens through suppression of certain cytochrome P450 isozymes.

What does it mean in modern scientific days?

Wound healing (Varnya) –

In a study in “Advances in experimental medicine and biology”, Curcumin was shown to have anti-inflammatory properties along with protecting effect on the skin by increased collagen deposit, angiogenesis and improved wound healing.

Anti-androgenic activity- (Yoshitpriya)

Analogues of curcumin (Active ingredient of C.longa) were studied as potential drugs to treat prostate cancer. These curcumin compounds were tested for cytotoxicity against human cancer cell lines (their ability to kill cancer cells). Along with this the “antiandrogenic”(Against androgen - male hormone) activity was also evaluated. Ten compounds out of forty were found to have potent cytotoxicity against prostate cancer cells and potent antiandrogenic activity. This study concluded that curcumin can help develop effective anti-prostate cancer drugs.

Anti-androgenic activity is also important in females in whom androgen activity has gone higher. For example - conditions such as PCOS demonstrate high androgen levels in the female body. C.longa can certainly be useful in restoring normal levels and thus controlling PCOS.

Insulin Sensitiser (Haridra prameha haranam)

Three Indian medicinal plants were studied for their effect on glucose uptake and insulin sensitivity. Measurement of glucose uptake in peripheral tissue is an important mechanism to access insulin sensitivity of a plant. This study was conducted to evaluate the *Insulin sensitising activity* of *Curcuma longa* along with two other herbs. In this experiment peripheral adipocytes were treated with concentrated extracts of all the three plants. The effects of plant extract on glucose uptake both in the presence and absence of insulin was evaluated and compared. These were also compared to the activity of a known insulin sensitiser (compound that enhances the action of insulin) called pioglitazone. The results showed that *C. longa* stimulated glucose uptake with a maximal effect. When combined with insulin *C. longa* was the only herb that showed an increase in glucose uptake. The results suggested that one of the mechanisms of anti-diabetic effect of *C. longa* can be through insulin sensitizing activity.

Cancer - Curcumin was studied for its action on human colorectal carcinoma cells. The cancer cells were studied for their viability (survival) after administering curcumin. The results revealed that curcumin significantly inhibited the growth of colorectal cancer cells. Curcumin also induced apoptosis (cell death) accompanied by ultra-structural changes in existing cancer cells. It was also shown that curcumin can induce cell cycle arrest in cancer cells.

Anti Cancer properties in head and neck cancer

Curcumin has been widely studied and evaluated across the globe for its effects in head and neck squamous cell carcinoma. Curcumin was studied in vivo and vitro to determine whether it would trigger cell death of squamous cell carcinoma of head and neck. It was concluded that curcumin suppresses the growth of squamous cell carcinoma in vitro and in vivo.

You may find this interesting:

- ❖ In Vitro Effects of Turmeric against Various Diseases/Disorders -

<http://www.ncbi.nlm.nih.gov/books/NBK92752/table/ch13-t3/?report=objectonly>

- ❖ In Vivo Effect of Turmeric against Development of Various Diseases/Disorders-
<http://www.ncbi.nlm.nih.gov/books/NBK92752/table/ch13-t4/?report=objectonly>
- ❖ Human Studies with Turmeric -
<http://www.ncbi.nlm.nih.gov/books/NBK92752/table/ch13-t5/?report=objectonly>
- ❖ [Chapter 13, Turmeric, the Golden Spice](#)
Herbal Medicine: Biomolecular and Clinical Aspects. 2nd edition.
Benzie IFF, Wachtel-Galor S, editors.

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 3. Maria M. LoTempio et al. Curcumin suppresses growth of head and neck squamous cell carcinoma, Clinical cancer Research 2005 ;vol 11 :6994
 4. Li Linn et al, Anti tumour Agents 250 Design and Synthesis of new Curcumin analogues as potential Anti prostate cancer agents, J. Med. Chem., 2006, 49 (13); Pg 3963 – 3972
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