

Functional properties of turmeric and its molecular mechanism of action

Introduction

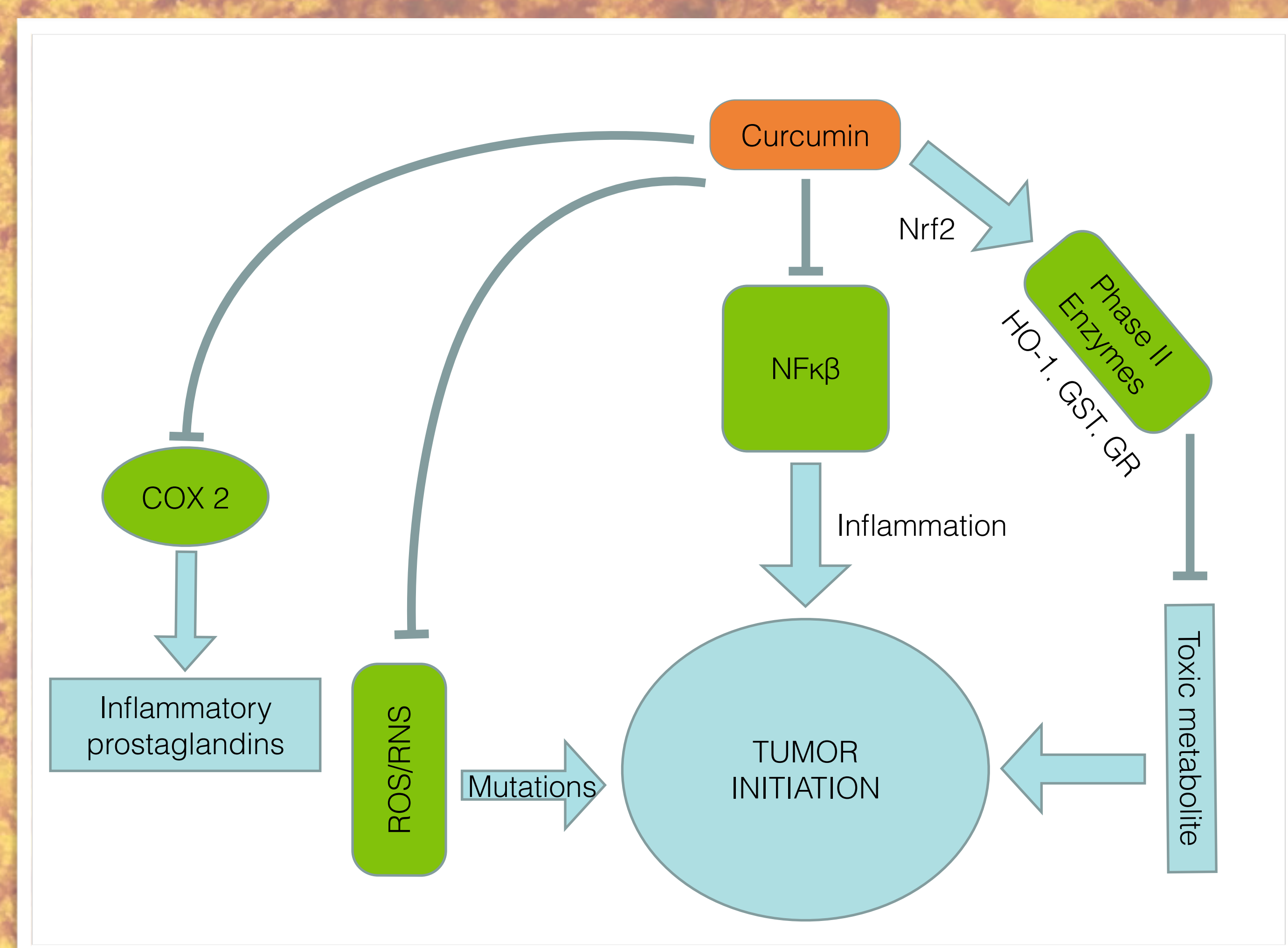
Curcuma longa presents great potential against diseases and other chronic conditions through the regulation of several transcription factors.

Objectives

To present the beneficial effects of turmeric from the molecular mechanism of action of its extracts and curcuminoids.

Molecular mechanism

- ▶ Antioxidant activity
- ▶ Immunomodulatory activity
- ▶ Anti-inflammatory and anticarcinogenic activity
- ▶ Antimicrobial activity
- ▶ Hypocholesterolemic activity
- ▶ Hypoglycemic activity
- ▶ Neuroprotective activity
- ▶ Other effects



Curcumin's action against inflammatory effect and tumor initiation

Experimental work

- ✱ Objective: to establish *in vitro* cytotoxic concentrations of curcumin on a cell line IPEC.
- ✱ Conclusions: in the case of curcumin in ethanol cell death begins to be significant at 1mM. And in curcumin in ethanol with water the cell death is significant from 0.5mM.

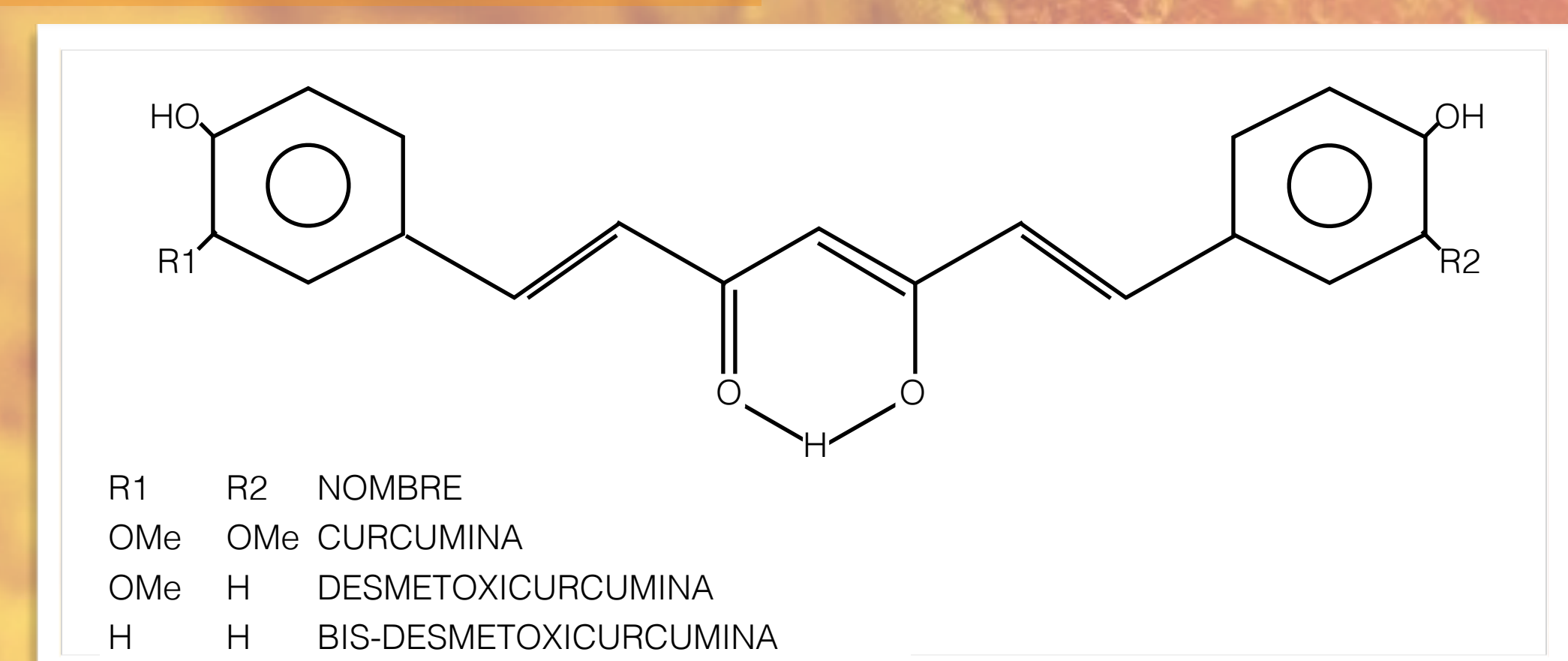
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Scientific name: *Curcuma Longa*.
Botanical family: *Zingiberaceae*.
Place of origin: Southeast Asia.

Turmeric's active components

- Desmethoxycurcumin
- Bis-desmethoxycurcumina
- Curcumin

Poor bioavailability of curcumin.



Metabolism of curcumin

- Metabolized in the gut by microorganisms.
- The reduction and conjugation in the liver is resulting in derivatives more easily eliminated from the body.

Conclusions

- ✓ Turmeric has a great therapeutic power through the chemical structure of its components.
- ✓ Its antioxidant action is the most important of which derive many of the other actions.
- ✓ Its bioavailability in humans is limited so further studies are needed.

