

# KIGELIA FRUIT EXTRACT

Botanical: *Kigelia africana* (syn. *Kigelia pinnata*)  
 Family: Bignoniaceae  
 Common: African sausage tree



## BOTANICAL CHARACTERISTICS

*Kigelia africana* (the "sausage tree") is widespread across Africa and is found in wet savannah and riverine areas. Growing over 20m high, it is semi-deciduous with grey-brown smooth bark. The flowers grow on rope-like stalks and are bat pollinated. The fruit are large grey-green "sausages", about 30-60cm long.

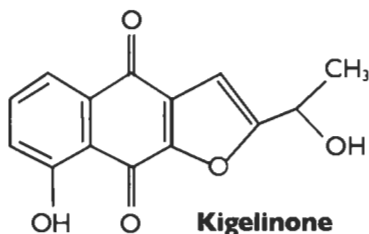
## TRADITIONAL USES

From Senegal down to South Africa the *Kigelia* fruit has a long history of both consumption and topical application. It is valued as an aphrodisiac, a disinfectant and a cure for dermal complaints. Adolescent boys and girls use the fruit for enhancing growth of the genitalia and breasts respectively. Women rub an ointment, made from *Kigelia* fruit pulp, onto their breasts as a skin tightening, breast firming and enlarging treatment. This treatment is also used on babies in the belief that they will grow to be fatter. Women use the ointment to ensure clear, blemish free skin and the whole fruit is used in Tonga as a loofah for scrubbing skin smooth. In addition the fruit is used effectively in dressing sores and wounds, both in humans as well as animals, and for a wide variety of skin applications, ranging from eczema, ulcers, acne, skin cancer and fungal infections.

## CHEMICAL AND MEDICINAL CHARACTERISTICS

Scientific literature confirms the validity of many of these traditional uses due to the presence of numerous secondary metabolites. These compounds include iridoids, flavonoids, fatty acids, sterols, glycosides and naphthoquinones. Antibacterial activity has been shown against both Gram-negative and Gram-positive bacteria. *Kigelia* extract was shown to contract the area of wounds less than 300 mm<sup>2</sup>. Strong anti-inflammatory activity has been indicated and determined to be due to the presence of specific COX 1 and 2 inhibitors, without showing the common side effects normally associated with this activity. In addition norviburtinal has shown cytotoxic activity through the reduction of both gross tumours and the incidence of tumour burden. *Kigelia*'s known chemical constituents include:

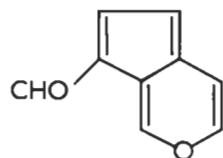
### NAPHTHOQUINONES (including isopinnatal, lapachol, kigelinone, caffeic acid)



### FATTY ACIDS

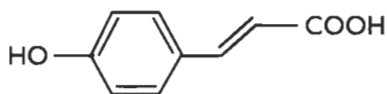
Fatty Acid	CO <sub>2</sub> Seed Extract
16:0 Palmitic acid (Hexadecanoic acid)	6.80
18:0 Stearic acid (Octadecanoic acid)	3.80
18:1 Oleic acid (9 - Octadecenoic acid)	13.80
18:2 Linoleic acid (9, 12 - Octadecanoic acid)	16.27
18:3 $\alpha$ -Linoleic acid (9, 12, 15 - Octadecatrienoic acid)	52.97

### NORVIBURTINAL



**Norviburtinal**

### COUMARINS (including kigelin)



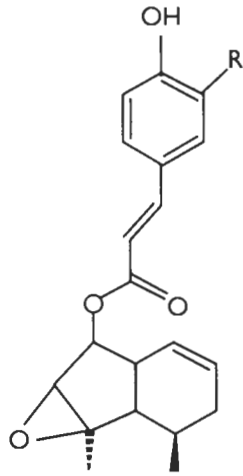
**Coumaric acid**

### STEROLS (Including Sitosterol and Stigmasterol)

Component	Average
l - Tetracosanol	0.019
l - Hexacosanol	0.018
l - octacosanol	0.084
l - Triacosanol	0.071
<b>Total Long-Chain Alcohols (%)</b>	<b>0.19</b>
Campesterol*	0.150
Stigmasterol	0.586
b-Sitosterol + Stigmastanol*	2.207
<b>Total Sterols (%)</b>	<b>2.94</b>

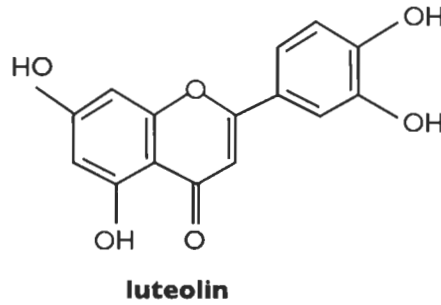
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## IRIDOIDS



R = H Minecoside  
R = OCH<sub>3</sub> Specioside

## FLAVONOIDS (Including luteolin)



**luteolin**

## SUGGESTED APPLICATIONS

Kigelia fruit pulp and extracts can be exploited in the nutraceutical, dietary/herbal supplement, pharmaceutical, cosmeceutical and other markets. Specific products could include:

- Anti-melanoma and after-sun applications
- Anti-inflammatory agent: extracts of Kigelia have been shown to be more effective than Indomethacin, a potent synthetic anti-inflammatory
- Antioxidant agent: an ethanol extract of kigelia has been shown to possess antioxidant activity
- Cosmetic skin tightening active ingredient

## PRODUCT FORMAT

1. Sliced, dried, ground and sifted fruit pulp
2. Oil bearing seed
3. Solvent extracts of Ethanol and PolyEthylene Glycol
4. Supercritical carbon dioxide extract of (1) and (2)

## SELECTED REFERENCES

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## PATENTS

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JP2003137763 (14.05.2003) Skin care preparation. *Noevir KK*.

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FR 2 739 910 (24.02.1997) Cosmetic or dermo-pharmaceutical composition for firming the breast, reducing hair loss, and reducing the growth of bristles, contains an extract of *Kigelia africana* *Greentech Sa Société Anonyme & Laboratoires Prod Hyg.*