[J Nutr.](http://www.ncbi.nlm.nih.gov/pubmed/22399525%22%20%5Co%20%22The%20Journal%20of%20nutrition.) 2012 Apr;142(4):675-80. doi: 10.3945/jn.111.156992. Epub 2012 Mar 7.

**Xanthones in mangosteen juice are absorbed and partially conjugated by healthy adults.**

[Chitchumroonchokchai C](http://www.ncbi.nlm.nih.gov/pubmed?term=Chitchumroonchokchai%20C%5BAuthor%5D&cauthor=true&cauthor_uid=22399525), [Riedl KM](http://www.ncbi.nlm.nih.gov/pubmed?term=Riedl%20KM%5BAuthor%5D&cauthor=true&cauthor_uid=22399525), [Suksumrarn S](http://www.ncbi.nlm.nih.gov/pubmed?term=Suksumrarn%20S%5BAuthor%5D&cauthor=true&cauthor_uid=22399525), [Clinton SK](http://www.ncbi.nlm.nih.gov/pubmed?term=Clinton%20SK%5BAuthor%5D&cauthor=true&cauthor_uid=22399525), [Kinghorn AD](http://www.ncbi.nlm.nih.gov/pubmed?term=Kinghorn%20AD%5BAuthor%5D&cauthor=true&cauthor_uid=22399525), [Failla ML](http://www.ncbi.nlm.nih.gov/pubmed?term=Failla%20ML%5BAuthor%5D&cauthor=true&cauthor_uid=22399525).

**Source**

Department of Human Nutrition, The Ohio State University, Columbus, OH, USA.

**Abstract**

The proposed health-promoting effects of the pericarp from mangosteen fruit have been attributed to a family of polyphenols referred to as xanthones. The purpose of this study was to determine the bioavailability of xanthones from 100% mangosteen juice in healthy adult participants (n = 10). Pericarp particles accounted for 1% of the mass and 99% of the xanthone concentration in the juice. The juice provided 5.3 ± 0.1 mmol/L total xanthones with α-mangostin, garcinones (C, D, and E), γ-mangostin, gartanins, and other identified xanthones accounting for 58, 2, 6, 4, and 5%, respectively. Participants ingested 60 mL mangosteen juice with a high-fat breakfast. Free and conjugated (glucuronidated/sulfated) xanthones were detected in serum and urine. There was marked variation in the AUC (762-4030 nmol/L × h), maximum concentration (113 ± 107 nmol/L), and time to maximum concentration (3.7 ± 2.4 h) for α-mangostin in sera during the 24-h collection. Similarly, xanthones in 24-h urine ranged from 0.9 to 11.1 μmol and accounted for 2.0 ± 0.3% (range 0.3-3.4%) of the ingested dose. There were no significant differences between female and male participants in mean pharmacokinetic values of α-mangostin in serum and urinary xanthones. Only 15.4 ± 0.7% of total xanthones in pericarp particles in the juice partitioned into mixed micelles during in vitro digestion. These results show that xanthones in mangosteen juice are absorbed when ingested along with a high-fat meal, although release of xanthones from pericarp particles during digestion may be limited.

PMID:

22399525

[PubMed - indexed for MEDLINE]

PMCID:

PMC3301988

[Available on 2013/4/1]