Below is a selection of research publications on the effects of noni and some of its compounds. Where possible we have included an extract, copyright laws prevent us from publishing full articles.

The scientific name for Noni is Morinda Citrifolia.

Chem Pharm Bull (Tokyo). 2005 Dec;53(12):1597-9.
New anthraquinone and iridoid from the fruits of Morinda citrifolia.

Faculty of Pharmaceutical Sciences, Kobe Gakuin University, Japan.
Kamiya K, Tanaka Y, Endang H, Umar M, Satake T.

From the fruits of Morinda citrifolia L., one new anthraquinone, 5,15-O-dimethylmorindol, together with five known anthraquinones and one new iridoid, morindacin, together with two known iridoids, were isolated. Their structures were elucidated by analysis of spectroscopic data.

Chinese Journal of Physiology, Vol. 47(4) pp. 169-174. 2004
Effect of juice from Morinda citrifolia (noni) on gastric emptying in male rats.
Pu, H.F., et al

Male rats were given noni by gavage at levels of 0.25, 1, or 4 mL/kg once per day for 1 or 7 days," explained H.F. Pu and coauthors at National Yang-Ming University in Taipei. The rats in the control group were given water, while the rats in the experimental group were fasted overnight before measurement of gastrointestinal motility. The results suggest that oral noni inhibits gastric emptying in male rats via a mechanism involving stimulation of CCK secretion and CCK1 receptor activation.

Hawaii Medical Journal, Vol. 63, pp. 182-184. June 2004.
Are immune responses pivotal to cancer patient's long term survival? Two clinical case-study reports on the effects of Morinda citrifolia (Noni).
Dr. Desmond K.W. Wong

There are abundant claims of benefit from cancer patients' use of noni but no well-documented clinical reports in peer reviewed journals. The author examined 2 such claims through interview, and review of medical records and pathology slides. The author concludes that these cases are valuable experiences and hope to stimulate interest in noni research as an important part of adjuvant immunotherapy for cancer.

NATURAL PRODUCT RESEARCH, VOL.17, NO. 5 OCTOBER 2003, PP.355-360.
Isolation and Structure Determination of a Benzofuran and a Bis-Nor-Isoprenoid from Aspergillus Niger Grown on the Water Soluble Fraction of Morinda citrifolia Linn. Leaves.
SIDDIQUI, B.S., SATTAR ISMAIL, F.A., GULZAR, T., BEGUM, S.

The leaves of Morinda citrifolia, Linn. afforded a new benzofuran and bis-nor-isoprenoid, blumenol C, hitherto unreported from this source. The structures of these have been elucidated through spectroscopic studies and NMR data that are being reported for the first time.

Journal of Plant Physiology, 1 June 2003, vol. 160, no. 6, pp. 607-614(8)
Regulation of anthraquinone biosynthesis in cell cultures of Morinda citrifolia
Stalman M.; Koskamp A-M.; Luderer R.; Vernooy J.H.J.; Wind J.C.; Wullems G.J.; Croes A.F.

Cell cultures of Morinda citrifolia L. are capable of accumulating substantial amounts of anthraquinones. Chorismate formed by the shikimate pathway is an important precursor of these secondary metabolites. Isochorismate synthase (EC 5.4.99.6), the enzyme that channels chorismate into the direction of the anthraquinones, is involved in the regulation of anthraquinone biosynthesis. Other enzymes of the shikimate pathway such as deoxy-D-arabino-heptulosonate 7-phosphate synthase (EC 4.1.2.15) and chorismate mutase (EC 5.4.99.5) do not play a regulatory role in the process. The accumulation of anthraquinones is correlated with isochorismate synthase activity under a variety of conditions, which indicates that under most circumstances the concentration of the branchpoint metabolite chorismate is not a rate-limiting factor. Anthraquinone biosynthesis in Morinda is strongly inhibited by 2,4-D, but much less by NAA. Both auxins inhibit the activity of isochorismate synthase proportionally to the concomitant reduction in the amount of anthraquinone accumulated. However, the correlation between enzyme activity and rate of biosynthesis is less clear when the activity of the enzyme is very

high. In this case, a limiting concentration of precursor may determine the extent of anthraquinone accumulation. Partial inhibition of chorismate biosynthesis by glyphosate leads to less anthraquinone accumulation, but also to a reduction in ICS activity. The complexity of the interference of glyphosate with anthraquinone biosynthesis is illustrated by the effect of the inhibitor in cell cultures of the related species Rubia tinctorum L. In these cells, glyphosate leads to an increase in anthraquinone content and a concomitant rise in ICS activity. All data indicate that the main point of regulation in anthraquinone biosynthesis is located at the entrance of the specific secondary route.

Angiogenesis, Volume 6, Issue 2, 2003, Pages 143 - 149
Inhibition of angiogenic initiation and disruption of newly established human vascular networks by juice from Morinda citrifolia (noni)
Conrad A. Hornick, Amy Myers, Halina Sadowska-Krowicka, Catherine T. Anthony, Eugene A. Woltering, Halina Sadowska-Krowicka

We tested the effects of noni juice in a three-dimensional fibrin clot matrix model using human placental vein and human breast tumor explants as sources for angiogenic vessel development. Noni in concentrations of 5% (vol/vol) or greater was highly effective in inhibiting the initiation of new vessel sprouts from placental vein explants, compared with initiation in control explants in media supplemented with an equivalent amount of saline. These concentrations of noni were also effective in reducing the growth rate and proliferation of newly developing capillary sprouts. When used at a concentration of 10% in growth media, noni was able to induce vessel degeneration and apoptosis in wells with established capillary networks within a few days of its application. We also found that 10% noni juice in media was an effective inhibitor of capillary initiation in explants from human breast tumors. In tumor explants which did show capillary sprouting, the vessels rapidly degenerated (2-3 days) in those exposed to media supplemented with 10% noni.

PHYTOTHER RES. 2002 Nov;16(7):683-5.
Antitubercular constituents from the hexane fraction of Morinda citrifolia Linn. (Rubiaceae)
Saludes, Jonel P., Garson, Mary J., Franzblau, Scott G., Aguinaldo, Alicia M.

A crude ethanol extract and hexane fraction from Morinda citrifolia Linn. (Rubiaceae) show antitubercular activity. The major constituents of the hexane fraction are E-phytol, cycloartenol, stigmasterol, -sitosterol, campesta-5,7,22-trien-3-ol and the ketosteroids stigmasta-4-en-3-one and stigmasta-4-22-dien-3-one. E-Phytol, a mixture of the two ketosteroids, and the epidioxysterol derived from campesta-5,7,22-trien-3-ol all show pronounced antitubercular activity.

INTEGRATIVE CANCER THERAPIES,1(2); 2002 PP.110-120.
From Polynesian Healers to Health Food Stores: Changing Perspectives of Morinda citrifolia (Rubiaceae).
MCCLATCHEY, WILL

Morinda citrifolia L. (Noni) is one of the most important traditional Polynesian medicinal plants. This is a literature review and recommendations for doing additional cancer research on noni.

Proc West Pharmacol Soc. 2002;45:76-8.
Preliminary investigation of the anti-inflammatory properties of an aqueous extract from Morinda citrifolia (noni)
McKoy ML, Thomas EA, Simon OR

No abstract available.

JOURNAL OF FOOD CHEMISTRY, VOL. 78, NO. 2, PP. 227-231. 2002
Antioxidative activity of extracts from Mengkudu (Morinda citrifolia L.) root, fruit and leaf.
ZIN, Z. M., ABDUL-HAMID, A., OSMAN, A.

This study was conducted to evaluate the antioxidative activity of extracts from different parts of Mengkudu (Morinda citrifolia L.), including leaf, fruit and root. Methanol and ethyl acetate were used as solvents and antioxidative effects measured by a ferric thiocyanate method (FTC) and thiobarbituric acid test (TBA). Roots showed the highest activity of the parts tested. The results suggest that several compounds contribute to antioxidative activity of different parts of Mengkudu. Activity in the roots may be due to both polar and non-polar compounds but, in the leaf and fruit, only to non-polar compounds.

AMERICAN SOCIETY OF MICROBIOLOGY 2002 ANNUAL MEETING. MAY 2002, SALT LAKE CITY, UT.

Preliminary Evaluation of the Antifungal Activity of Extracts of Morinda citrifolia Linn.

DR. SCOTT GERSON

Extracts of Morinda citrifolia Linn. exhibit significant antimicrobial and anti fungal activity against various strains of fungi and bacteria A. niger, C. albicans, E. coli, S. aureus, and T. mentagrophytes.

93RD ANNUAL MEETING, AMERICAN ASSOCIATION FOR CANCER RESEARCH. APRIL 6-10, 2002.

Protective Effect of Morinda citrifolia on Hepatic Injury Induced by a Liver Carcinogen.

MIAN-YING WANG, MD

In an in-vivo study, TAHITIAN NONI Juice showed a protective effect on hepatic injury induced by a liver carcinogen. As a selective COX-2 inhibitor, TNJ may protect liver by suppressing COX-2 enzyme.

7TH INTERNATIONAL CONFERENCE ON EICOSANOIDS & OTHER BIOACTIVE LIPIDS IN CANCER, INFLAMMATION AND RELATED DISEASE, POSTER SESSION. OCT. 14-17, 2001

Protective Effect of Morinda Citrifolia (Noni) on Carbon Tetrachloride-Induced Liver Injury in Female SD rats.

MIAN-YING WANG, MD

In an in-vivo study, TAHITIAN NONI Juice showed hepatic protection in rats? damaged liver caused by CCl4. The antioxidant level was examined and the results indicated that TNJ may protect liver from damage by scavenging free radicals and blocking lipid peroxidation.

JOURNAL AGRICULTURAL FOOD CHEMISTRY, 2001 SEP; 49(9): 4478-81

Flavonol Glycosides and Novel Iridoid Glycoside from the Leaves of Morinda citrifolia.

SANG S, CHENG X, ZHU N, STARK RE, BADMAEV V, GHAI G, ROSEN RT, HO CT.

One new iridoid glycoside and five known flavonol glycosides were isolated from the leaves of Morinda citrifolia. Their antioxidant potential was measured and all compounds showed antioxidant activity.

CANCER RESEARCH 2001 Aug 1; 61(15): 5749-56

Two Novel Glycosides From the Fruits of Morinda Citrifolia (Noni) Inhibit AP-1 Transactivation and Cell Transformation in the Mouse Epidermal JB6 Cell Line.

LIU G, BODE A, MA WY, SANG S, HO CT, DONG Z.

Two novel glycosides, 6-O- (beta-D-glucopyranosyl)-1-O-octanoyl-beta-D-glucopyranose and asperulosidic acid, were extracted from noni fruit juice. Experimental results indicated that both compounds were effective in suppressing cell transformation in cancer.

7TH INTERNATIONAL CONFERENCE ON EICOSANOIDS & OTHER BIOACTIVE LIPIDS IN CANCER, INFLAMMATION AND RELATED DISEASE, POSTER SESSION. OCT. 14-17, 2001

A New Selective COX-2 Inhibitor: Morinda Citrifolia (NONI)

Dr. CHEN SU

In vitro study showed that TNJ is a selective COX-2 inhibitor. In comparison to aspirin, Indomethacin, and Celebrex?, the selective inhibition is comparable to Celebrex?, a well-known selective COX-2 inhibitor.

11TH ANNUAL RESEARCH CONFERENCE ON DIET, NUTRITION AND CANCER, POSTER SESSION. JULY 16-17, 2001.

Morinda Citrifolia and Cancer Prevention

MIAN-YING WANG, MD

In an in-vivo study, TAHITIAN NONI Juice reduced DNA adducts caused by 7,12-dimethylbenz (?)-anthracene (DMBA). TNJ showed stronger antioxidant activities compared to Vitamin C, Pycnogenol?, and Grape seed powder. The antioxidant activities of TNJ may contribute to the mechanism of reducing DNA adduct formation.

JOURNAL NATURAL PRODUCTS, 2001 JUN, 64(6): 799-800.

Iridoid Glycosides from the Leaves of Morinda citrifolia.

SANG S, CHENG X, ZHU N, STARK RE, BADMAEV V, GHAI G, ROSEN RT, HO CT.

A new iridoid glucoside named citrifolinoside A, was isolated from Morinda citrifolia leaves along with the known iridoids asperuloside and asperulosidic acid

ORGANIC LETTERS, 2001 MAY 3, 3(9): 1307-9.
A New Unusual Iridoid with Inhibition of Activator Protein -1 (AP-1) from the Leaves of Morinda citrifolia L.
SANG S, CHENG X, ZHU N, STARK RE, BADMAEV V, GHAI G, ROSEN RT, HO CT.

From the leaves of Morinda citrifolia, a new unusual iridoid, named citrifolinoside (1), showing significant inhibition of UVB-induced AP-1 (Activator Protein-1, which is involved in cancer induction) activity in cell cultures, has been isolated.

STRANG INTERNATIONAL CANCER PREVENTION CONFERENCE, POSTER SESSION. NOV. 10-11, 2000.
Cancer Prevent Effect of Morinda Citrifolia
MIAN-YING WANG, MD

In an in-vivo study, TAHITIAN NONI Juice reduced DNA adducts caused by 7,12-dimethylbenz (?)-anthracene (DMBA). TNJ showed stronger antioxidant activities compared to Vitamin C, Pycnogenol?, and Grape seed powder. The antioxidant activities of TNJ may contribute to the mechanism of reducing DNA adduct formation.

JOURNAL NATURAL PRODUCTS, 2000 AUG, 63(8): 1182-3.
Novel Glycosides from Noni (Morinda citrifolia).
WANG M, KIKUZAKI H, JIN Y, NAKATANI N, ZHU N, CSISZAR K, BOYD C, ROSEN RT, GHAI G, HO CT.

Three new glycosides were isolated from Morinda citrifolia (noni) fruit. They are 6-O- (beta-D-glucopyranosyl)-1-O-octanoyl-beta-D-glucopyranose, 6-O- (beta-D-glucopyranosyl)-1-O-hexanoyl-beta-D-glucopyranose and 3-methylbut-3-enyl 6-O-beta-D-glucopyranosyl-beta-D-glucopyranoside.

AMERICAN JOURNAL OF KIDNEY DISEASES, Volume 35, No 2 (February), 2000: 310-312
Noni Juice (Morinda Citrifolia): Hidden Potential for Hyperkalemia?
B MIELLER, DR MK SCOTT, K. D. SOWINSKI, and DR K.A. PRAG

Report of a patient with chronic renal insufficiency who self-medicated with an alternative medicine, noni juice (Morinda Citrifolia). The patient had hyperkalemia. The potassium concentration in noni juice was determined and found to be 56.3 mEq/l, similar to that in orange juice and tomato juice.

PHYTOTHERAPY RESEARCH 13: 380-387 (1999)
An Immunomodulatory Polysaccharide-Rich Substance from the Fruit Juice of Morinda citrifolia (Noni) with Antitumour Activity
ANNE HIRAZUMI AND EIICHI FURUSAWA

The fruit juice of Morinda citrifolia (noni) contains a polysaccharide-rich substance (noni-ppt) with anti-tumor activity. Therapeutic administration of noni-ppt significantly increased survival time of tumor bearing mice. Results also suggested the possibility that noni-ppt may suppress tumor growth through activation of the host immune system. Noni-ppt was also capable of stimulating the release of several cytokines from immune cells. Improved survival time and curative effects occurred when noni-ppt was combined with sub-optimal doses of standard chemotherapeutic agents, suggesting important clinical applications of noni-ppt as a supplemental agent in cancer treatment.

FEDERATION OF EUROPEAN BIOCHEMICAL SOCIETIES LETTERS 1999, 12, 444(2-3): 173-6.
Stimulation of Ultraviolet-induced Apoptosis of Human Fibroblast UVr-1 Cells by Tyrosine Kinase Inhibitors.
HIWASA T, ARASE Y, CHEN Z, KITA K, UMEZAWA K, ITO H, SUZUKI N.

Damnacanthal, from Morinda citrifolia exhibited apoptosis (cell death) in cancer cells. Damnacanthal treated cancer cells showed more DNA fragmentation from ultraviolet irradiation, than cancer cells treated with ultraviolet radiation alone.

JOURNAL AGRICULTURAL FOOD CHEMISTRY 1999 DEC, 47(12): 4880-2.

Novel Trisaccharide Fatty Acid Ester Identified from the Fruits of Morinda citrifolia (Noni).

WANG M, KIKUZAKI H, CSISZAR K, BOYD CD, MAUNAKEA A, FONG SF, GHAI G, ROSEN RT, NAKATANI N, HO CT.

Two known glycosides and a novel trisaccharide fatty acid ester were isolated from Morinda citrifolia (noni) fruit. The novel trisaccharide fatty acid ester was 2,6-di-O- (beta-D-glucopyranosyl)-1-O-octanoyl-beta-D-glucopyranose. The known compounds were rutin and asperulosidic acid.

JOURNAL OF ETHNOPHARMACOLOGY, 1998 DEC; 63(3): 201-8.

Jamu Gendong, A Kind of Traditional Medicine in Indonesia: The Microbial Contamination of its Raw Materials and End Products.

LIMYATI DA, JUNIAR BL.

Microbial contamination of seven kinds of Jamu Gendong (JG) and their raw materials was conducted. The results showed the samples were heavily contaminated with bacteria, yeast and molds. Similar results were obtained from the plant material constituents of JG. Morinda citrifolia fruit was less contaminated and can be screened for antibacterial and antifungal activities.

DOCTOR OF PHILOSOPHY DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII FOR A DEGREE IN BIOMEDICAL SCIENCES (PHARMACOLOGY) Dec 1997.

Antitumor Studies of a Traditional Hawaiian Medicinal Plant, Morinda citrifolia (Noni), In Vitro and In Vivo.

HIRAZUMI, ANNE, Y.

The fruit juice of Morinda citrifolia L. (Noni) contains a polysaccharide-rich precipitate (noni-ppt) with antitumor activity in the Lewis Lung (LLC) peritoneal carcinomatosis model. Noni-ppt was capable of stimulating the release of several mediators from murine effector cells. The pattern of release of these mediators suggested that noni-ppt may promote both a non-specific and Th1 cell mediated antitumor response. Therapeutic administration of noni-ppt demonstrated significant suppression of S.180 ascites growth in allogenic animals, without being substantially cytotoxic to these cells in vitro. Improved survival time and curative effects occurred when noni-ppt was combined with sub-optimal doses of the standard chemotherapeutic agents

JOURNAL OF ETHNOPHARMACOLOGY 49: 23-32 (1995)

Anti-Microbial Activity and Anti-Complement Activity of Extracts Obtained from Selected Hawaiian Medicinal Plants

C.P. LOCHER, M.T. BURCH, H.F. MOWER, J. BERESTECKY, H. DAVIS, B. VAN POEL, A. LASURE, D.A. VANDEN BERGHE, A.J. VLIETINCK.

Selected plants (including Morinda citrifolia) having a history of use in Polynesian traditional medicine for the treatments of infectious disease were investigated for anti-viral, anti-fungal, and anti-bacterial activity in vitro. Several extraction techniques are explained.

PROCEEDINGS OF THE WESTERN PHARMACOLOGY SOCIETY, 1994, 37: 145-146.

Anticancer Activity of Morinda citrifolia (Noni) on Intraperitoneally Implanted Lewis Lung Carcinoma in Syngeneic Mice

A. HIRAZUMI, E. FURUSAWA, S.C. CHOU & Y. HOKAMA

Morinda citrifolia (noni) juice was shown to have antitumor activity on Lewis Lung carcinoma in mice. The ethanol precipitate (noni-ppt) was not directly toxic to cancer cells. Instead, it acts indirectly by enhancing the host immune system involving macrophages or lymphocytes. Noni-ppt had a beneficial effect when combined with sub-optimal doses of chemotherapeutic agents. This suggests a possibility of clinical application of noni-ppt in cancer treatment.

MASTER OF SCIENCE THESIS FOR BIOCHEMISTRY, UNIVERSITY OF HAWAII, DECEMBER 1993

The Isolation and Characterization of a Fluorescent Compound from the Fruit of Morinda citrifolia (Noni): Studies On The 5-Ht Receptor System

HELEN H. SIM

The isolation and characterization of scopoletin from the fruit of Morinda citrifolia (noni) is presented.

CANCER LETTERS 73: 161-166 (1993)

Induction of Normal Phenotypes in ras-transformed Cells by Damnacanthal from Morinda citrifolia

TOMONORI HIRAMATSU, MASAYA IMOTO, TAKASHI KOYANO, KAZUO UMEZAWA

An anthraquinone, damnacanthal, was isolated from the chloroform extract of the root of Morinda citrifolia. Damnacanthal induced normal morphology and cytoskeletal structure modification in ras-transformed cancer cells. Thus damnacanthal is a new inhibitor of ras function (which is responsible for these cells becoming cancerous).