

**ONTARIO COURT OF JUSTICE
(Northeast Region)**

B E T W E E N:

HIS MAJESTY THE KING

Respondent

- and -

DANE BEBAMASH

Applicant

AFFIDAVIT OF JOHN THOR ARNASON

I, John Thor Arnason, of the City of Ottawa, in the Province of Ontario, MAKE OATH AND SAY/AFFIRM:

1. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - (a) to provide opinion evidence that is fair, objective and non-partisan;
 - (b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
 - (c) to provide such additional assistance as the court may reasonably require, to determine a matter in issue.
2. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.
3. I am offering myself as an expert in ethnobotany of the indigenous people, including Anishinaabe people in Canada.

PL

JTA

4. I have had a 45-year career in ethnobotany, with an emphasis on research with traditional healing and medicinal plants. I have worked as professor at the University of Ottawa for many years. I have contributed research in Ethnobotany, Ethnopharmacology and Phytochemistry as well as related fields of Chemical Ecology, and Biopharmaceutical Science. At the beginning of my career as a Professor at the University of Ottawa, I undertook a review of the literature on the ethnobotany of Eastern Canada, which identified over 400 medicinal plant species used by First Nations for food and medicine, mainly in the Anishinaabe traditional territories (Arnason et al, 1981. Use of plants for food and medicine by Native Peoples of eastern Canada. Can. J. Bot. 59: 2189-2325). Although dated, this highly cited article peer reviewed article is still the best summary of the early research on Anishinaabe ethnobotany. I have supervised several full status and mixed ancestry Indigenous graduate students studying ethnobotany and plant medicines. I have worked directly with First Nations healers as a collaborating investigator in the Canadian Institutes of Health Research Team. I have published numerous articles on Indigenous traditional healing in collaboration with local elders and other researchers on indigenous plant use. My lab has added phytochemical and pharmacological studies evaluating safety and efficacy of treatments to traditional ethnobotanical knowledge of elders. I have worked with and supervised Anishinaabe MSc and PhD students on Anishinaabe-related ethnobotany matters.

5. Attached hereto and marked as exhibit A is a true copy of my CV.

Is the Anishinaabe approach to traditional healing and plant medicine holistic, localized, spiritual and social?

6. Yes. The Anishinaabe, like many Indigenous people of Turtle Island (North America) have a cosmocentric world view of humans as an interacting part of nature. All animate and inanimate things are connected and affect one another in a holistic way, a concept that the Algonquin call manitowi. These views are

PL
JPA

common to many Indigenous cultures of Turtle Island, just as the Christian world view is common to many European cultures. Healing restores the balance of nature. Medicine is not merely a pharmaceutical product but a holistic way of life, encompassing diet, spiritual thoughts, and actions as well as interaction within the community and family and with the land (Joseph et al 2022, Arnason et al 1981, Turner, 2014). When sickness is greatly affecting individuals, intervention with spiritual and social practices with others is recommended such as smudging, sweat lodge ceremonies, or with prayers, and with medicinal plant therapies that often have a pharmaceutical action.

Does the Anishinaabe approach to traditional healing and plant medicine require that plant medicine be dispensed by a community member? And if so, is it necessary that the community member dispensing the plant medicine be a traditional healer or could it be someone within the community who has special knowledge and/or interest in the plant medicine?

7. In Anishinaabe traditional healing, plant medicines are generally either dispensed or recommended by community members. This person can be a family member, or community member who is knowledgeable about plant medicines. For serious conditions the patient may seek out a traditional healer. Traditional healers are generally community elders trained by the previous generation.

How long has the Anishinaabe approach to traditional healing and plant medicine been in existence among the Anishinaabe people?

8. Ethnobotanists estimate that traditional healing is an ancient oral tradition that has been conserved. For the Anishinaabe it may see its origins as far as when the land was first occupied. We provided published evidence in the ethnobotanical literature of plants used in pre-Columbian period that are still used today based on oral tradition (Ferrier et al, 2020). There is considerable other archeological

PL
JTA

evidence of this. Historical descriptions of Anishinaabe traditional healing date back to the first European records in the Jesuit relations of New France in the 17th century.

Is the Anishinaabe approach to traditional healing and plant medicine integral, essential or fundamental to the pre-contact Anishinaabe society?

9. Many of the current practices in healing such as use of specific plants for treatment of specific medicinal conditions, the care provided by traditional healers and the use of culture practices such as smudging and sweat lodge have a clear continuity with pre-Columbian times. Many of the plants and medicinal practices were recorded in 19th and early 20th century published studies which I reviewed in a highly cited article published in Canadian Journal of Botany (Arnason et al 1981). Some ritual practices such as those of the Grand Medicine Society or Mediwiwin were suppressed by Christian missionaries. The residential school system attempted to eradicate both Indigenous language and culture but was not successful. Communities have responded with efforts to reinforce cultural traditions and knowledge which they believe are essential to their identity.

Is there modern-day continuity with the Anishinaabe approach to traditional healing and plant medicine?

10. A key characteristic of Anishinaabe and many other Indigenous cultures in Turtle Island is close attachment to the land, and its plants and animals (Joseph et al 2022). This has fostered a continuity in their traditional knowledge and healing practices maintained by the living library of traditional healers. There has been some minor change due to modern cultural influence from other Indigenous people. For example, sage, a western herb, may now be used in the “sacred four” plant mixture in place of scarce local ingredients like kinnikinnik.

JTA

PL

For the Anishinaabe and the Canadian indigenous people is it important and more therapeutic that plant medicine be dispensed locally in a culturally appropriate manner as opposed to the plant medicine be mailed to the indigenous patient by a corporation?

11. Plant medicines are considered sacred and a gift of the creator. They must be collected respectfully and dispensed in a culturally appropriate way. Indigenous communities have been very reluctant to commercialize any traditional medicines for this reason. Clearly shipment of a plant medicine by a corporation is unacceptable to their traditions, ethics and beliefs. In our work with the Eeyou Istchee Cree, we observed that compliance with modern medical therapy is poor but compliance was much higher when traditional practices are involved (<http://www.taam-emaad.umontreal.ca>). There is a wide consensus in Indigenous communities that traditional healing and plant medicine are highly therapeutic.

12. Bibliography

Assinewe, V. 2003 Finding the Science in Tradition in "Biodiversity and Health", NRC press, Jt Arnason et al eds.

Arnason et al, 1981 Use of Plants for Food and medicine by native people of Eastern Canada. Can J. Bot 2189-2325

Ferrier, J. et al 2020 A Classic Maya Mystery of a Medicinal Plant and Maya Hieroglyphs Heritage 3 (2), 275-282

Joseph, L. et al, 2022 Shifting narratives, recognizing resilience: new anti-oppressive and decolonial approaches to ethnobotanical research with Indigenous communities in Canada Ethnobotany and ethnopharmacology in the Americas, Botany 2

Turner, N.J. 2014 Ancient pathways, ancestral knowledge. McGill Queens University Press. London

PL
JTA

Sworn remotely by John Thor Arnason of Ottawa in the Province of Ontario, before me
at the City of Toronto in the Province of Toronto on the 25th day of September 2023, in
accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely



John Thor Arnason



Commissioner for taking affidavits

Paul Lewin

John Thor ARNASON, Ph.D.
Curriculum Vitae

This is Exhibit A released to in the
affidavit of John Thor Arnason
sworn before me, this 25th
day of September 2023
[Signature]
A Commissioner, ETC

A) Contact and personal information

Distinguished Professor, Biology Department (emeritus)
University of Ottawa, Ottawa, ON K1N 6N5

Phone: (613) 784 0547 email: john.arnason@uottawa.ca

Languages: English French (speak, read, write) Spanish (speak, read)

Research Keywords: phytochemistry, ethnobotany, ethnobotany, medicinal plants, biofilm inhibitors, anxiolytics, anti-inflammatories, neuroscience, ethnozoopharmacognosy, chemical ecology,

Google scholar:

Arnason JT<https://scholar.google.com/scholar?oi=gsb95&q=Arnason%20JT&lookup=0&hl=en>

ResearchGate: https://www.researchgate.net/profile/John_Arnason2

*SWORN REMOTELY PAUL LEWIN in
the City of Toronto & John Thor
Arnason
in the City
of Ottawa*

B) Education

Post Doctoral Fellow (Botany) University of British Columbia, Vancouver 1978-1979

Ph.D. (Biology) Carleton University, Ottawa 1971-1976

Stagiaire (Ecologie) Université de Grenoble, Grenoble, France 1970-1971

B.Sc. (Hons-Chemistry) Carleton University, Ottawa 1966-1970

C) Employment History

<u>Positions Held</u>	<u>Institution</u>	<u>Dates</u>
Distinguished Professor (emeritus)	Biology, University of Ottawa	2017-
Professor	Biology, University of Ottawa	1990-2016
Director, Biopharmaceutical Science	Faculty of Science, University of Ottawa	2010- 2013
Associate Director, Biopharmaceutical Science	Faculty of Science, University of Ottawa	2005-2009
Member, Board of Governors	University of Ottawa	1993-1996
Director, Collaborative Program in Toxicology	Ottawa-Carleton Institute of Biology	1995-1997
Vice-Dean (Research)	Faculty of Science, University of Ottawa	1991-1994
Director	Ottawa-Carleton Institute of Biology	1989-1991
Associate Director	Ottawa-Carleton Institute of Biology	1987-1989
Visiting Professor	Laboratorio de Plantas Medicinales, Mexico	1987
Associate Professor (tenured)	University of Ottawa	1983-90
Assistant Professor	University of Ottawa	1979-83
NSERC Postdoctoral Fellow	University of British Columbia, Vancouver	1978-79

12

JTA

D) Recognition

Natural Health Products Research Society, 2019 establishes Arnason Field research scholarship
 University of Ottawa Distinguished Professor, Jan 2017- (10 nominations /year)
 Norman Farnsworth Botanical Research Award, American Botanical Council 2015/6
 Neil Towers research Award, Natural Health Products Research Society, 2012
 Medicines from Nature Award, University of Arkansas, 2010
 Researcher of the Year, Department of Biology, University of Ottawa, 2009, 2012
 Researcher of the Year, Faculty of Science, University of Ottawa, 2009
 Special issue of Pharmaceutical Biology dedicated to John T. Arnason, January 2008
 Bronze Medal, International Chemical Ecology Society, 2004

E) Scholarly and professional activities (1990-present)

- Guest editor, *Botany* special issue, Ethnobotany and Ethnopharmacology in the Americas
<https://cdnsiencepub.com/toc/cjb/100/2>
- Keynote Invited speaker GA2023 conference Dublin Ireland. "Ethnobotany of North America"
- Invited speaker AMPIRONAT (Mexican Natural Products Congress) May 2023
- CABSIN committee on Pharmacopeia of the Americas (2023)
- member IUCN medicinal plant specialist committee
- Edible and Medicinal Plants of Canada, 10 year anniversary on Globe and Mail best Seller list 2023
- Guest editor, *Frontiers in Pharmacology: Ethnopharmacology* special issue, Chen, Huang, Yu and Arnason, 2022. Medicinal Plants and Their Active Constituents in the Treatment of Metabolic Syndrome
https://www.frontiersin.org/research_topics/21916/
- Associate editor, *Frontiers in Pharmacology: Ethnopharmacology* 2020-present
- Invited speaker- CACOR The future of Medicinal biodiversity Sept 7 2022
- External reviewer/examiner – promotion to full professor: Lethbridge University 2022, promotion to distinguished professor: 2022 University of Windsor, Habilitation de recherche 2022, Université des Antilles, promotion to full professor: UBC 2022, nomination as Killam Professor: UBC 2022
- Plenary lecturer, Interphyto conference, Brasilia Brazil March 2021
- External advisor Office of the Auditor General, review of NNHPD, Health Canada
- Associate editor, *Frontiers in Pharmacology* 2020-
- Guest editor, *Botany*, for special issue on ethnobotany 2020-1
- Guest lecturer, Trinity College Dublin Oct 2020
- Co chair Natural Health Products Research Society Conference 2020-1
- External reviewer – promotion to full professor: Memorial University, Carleton University, CFI UBC
- External examiner, PhD thesis, UNB .2019, PhD thesis Université des Antilles 2019
- Plenary speaker, Natural Health Products Conference, 2019
- CIHR College of reviewers 2018-21, NSERC reviewers
- Vice President, Souroubea Botanicals –2019- present
- CIHR Pharmacology research grants review panel 2017-18
- Invited speaker INISOFOR 2017, maritime Natural Products Conference, 2018
- USDA research grant review panel 2017
- Vice President Souroubea Botanicals Inc., 2016-present
- Invited speaker NHPRS conference, Metabolomics the final frontier, NHPRS Vancouver May 2017
- Invited speaker, American Association of Pharmaceutical Scientists, Denver, Colorado Nov 2016
- Invited speaker, From Forest and Field, Moncton Oct 2016
- CIHR Foundation Grants review panel 2016
- Scientific Program committee, NHPRS Conference, London, ON, 2015.
- Rapporteur, soutenance de thèse, Université des Antilles françaises 2015
- Host, Natural products and TCM workshop, University of Ottawa, May 2015
- Evaluation of CRC Natural Products Chair, Brock University, 2015
- External examiner PhD thesis, University of British Columbia, 2015
- Peer reviewed grants: USDA, NSERC, Polish Science Council, Villum foundation, Denmark 2014

PL

J.T.

- Senior Advisor, Forest Fibre and Biochemicals Network, (2013-5)
- Rapporteur et Président du Jury, soutenance de thèse, Université de Polynésie Française 2014
- External examiner, PhD thesis, Carleton University. 2014, UBC 2015
- Evaluations for promotion, University of British Columbia, Guelph, Oregon state 2014
- Peer review grants panel, Agriculture and Agri-Food Canada 2013
- Conference scientific committee, NHPRS and Phytochemical Society, 2009-2014
- External examiner, University of British Columbia, Université de de Guadeloupe, 2011
- CIHR China Canada collaborative grants panel, 2011
- Scientific advisory boards, Safer Ltd., 1987-1990.

E2 Legal

- Expert advisor, Ontario Court, (DMT content of Mimosa spp) 2017
- Expert advisor, Health Canada (phytochemical identity case) 2012-2016

F) Graduate and undergraduate teaching**F1) Metrics related to supervision of graduate students (+overseas)**

	Completed	In progress	Inactive
Doctoral theses:	34(3)	0	0
Masters theses:	38(1)	0	0

PL
JTA

F2) Students and Postdocs (2016-2020):

R Rosario, Honours BSc, Maya ethnobotany 2020-21
 R. Liu, PDF, Next generation NHPs (2020)
 R. Liu, PhD. Anxiolytic natural health products (2019)
 K. Hanessey, Honours BSc, Anxiolytic botanicals for animal health (2018)
 F. Corless. Honours BSc Anxiolytic herb drug interactions (2017)
 A. Cadieux, Honours BSc, Biofilm inhibitors in medicinal plants (2017)
 C-H. Ta, PDF, collaboration with Cornell University, Geophagy in primates (2016-2018)
 R. Singh, Honours BSc Triterpenes In *Platanus* spp. (2018)
 C Dobson, Honours BSc, Metabolism of natural products in liver microsomes (2017)
 F. Sunstrom, Honours BSc, Plant metabolomics.(2018)
 F. Ahmed, Ph.D. *Rhodiola rosea*, a neuroprotectant in Alzheimer's disease 2015
 S Liu, Ph.D. Plant derived insecticide synergists 2015
 C.A. Ta, Ph.D. Biofilm inhibitors from neotropical plants 2015
 A. Wayne, Ph.D. Wood chemicals affecting fish reproduction 2015
 M. Taylor, M.Sc. Neuroprotective plants from Maya ethnobotany 2014 (with Bennett)
 C. Cerniak, Ph.D. Safety and pharmacodynamics of traditional medicines 2013 (with Foster)
 B. Walshe Roussel, Ph.D. Anti-inflammatory agents from ethnobotanically used plants 2013
 J. Ferrier, Ph.D. Antidiabetic plants from ethnobotanical sources 2013 (with Balick, NYBG)
 N. Kovicich, Ph.D. Modification of Soybean coat anthocyanins 2012 (with B. Miki, AAFC)

F5) Overseas graduate co-supervision/advisor/examiner

S. Garcia, PhD. Universidad Metropolitana (Mexico)- external
 R. Dorsenville, PhD student, U de Guadelupe, Antidiabetic plants- cosupervisor
 A. Serratos, PhD. Universidad Metropolitana (Mexico)- external
 I. Boulogne PhD Univerite de Guadeloup (France)- external
 M Otarola, MSc, U de Costa Rica- advisor
 A Bily, PhD Universite de Pau France cosupervisor
 A Jiminez, PhD UNAM, Mexico- cosupervisor
 M Ramirez, PhD UNAM, Mexico- cosupervisor

F6) Post doctoral fellows and Research Assistants

A. Saleem, Phytochemistry and metabolomics (2005-18) (RA)
 J. Guerrero, Antidiabetic plants (2007-13)
 R Santiago, Phytochemistry of crop resistance (2006-8)
 V. Treyvaud Amiguet, Arctic nutraceuticals (2005-8)
 M. Asim, Anti-diabetic phytochemicals (2006-11)
 A. Agbonon, Antioxidants from African plants (2004-5)
 J. Rodriguez, Polysaccharides with immunostimulant properties (2002)
 Z.J. Zhang, Antimalarials and novel natural products (2000-2)
 A. Teshome, Traditional knowledge-Sorghum (2001-2)
 C. Bergeron, Phytochemistry of medicinal plants (1997-8)
 C. Bernard, Metabolism of dillapiol(1996-7)
 R. Pereda, Phytochemistry of Piperaceae (1995)
 D. Classen, Phytochemistry (1985-86)
 P. Fields, Phototoxins (1987-1988)
 A. Sen, Phenolics in maize (1988-90)
 R. Marles, Feverfew mode of action (1989-1992)
 M. Abou-Zaid, Guava, mode of action (1990-1992)
 C. Chauret, Tropical natural products(1993-1995)
 P. Yat, Ginseng evaluation project (1995-96)

F7) Graduate courses

Bio 8102 Ethnobotany and ethnopharmacology: 1998, 2000, 2002, 2003, 2004, 2009, 2011, Sabbatical in

PL

JTA

2013, 2015, 2017, 2021.

Plant Animal Interactions: 2002, 1999, 1997, 1995, 1993, 1991, 2002, 2006, 2008, 2012, 2014, 2016

F8) Undergraduate teaching (over 37 years I have taught > 15,000 students)

I left full time undergraduate teaching in 2017 except for guest lectures and supply teaching

Chemical Ecology Bio4128 (1985-2002)

Plant Biodiversity to Biotechnology (Bio2137 and Bio 2127) -1990- 2015

Plant Physiology and Biochemistry (Bio3140) 1980-2009, 2015-17

Introduction to Biopharmaceutical Science (BPS2110) 2009-2013

Biopharmaceutics (BPS 4131) 2009-13

Natural Products and Phytomedicines BPS4123 (2003- 2016)

Tropical Biology (Bio4162) 1990-2010

Tropical Ecosystems Ontario field course (1995- 2006)

Ethnobotany and Ethnopharmacology (Bio8102) (various years)

Curriculum development: I developed entry and capstone courses for BPS, BPS 2110 and BPS4131

I developed the following new courses for Biology (Bio2137, Bio 4128, Bio 4162)

G) International collaborations

J Bales, Franklin Johnson and Phil Hincks, Trout Lake Farm, Amway corp. Echinacea germplasm

A. Arvelo Arevalo, BASF, Research Triangle Park, United States Insecticide synergists

JA Guerrero, INECOL Xalapa, Mexico, Medicinal Plants and Chemical Ecology

P. Sanchez, Marco Otarola and L. Poveda, Universidad Nacional Costa Rica, Tropical Medicinal Plants

C. Regnault Roger, Universite de Pau, France, Maize phytopathology Botanical insecticides

T Pesek, MD Cleaveland State, Traditional Medicine

V Cal Bleize Indigenous Training Institute, Ethnobotany of the Maya

M. Gbeassor, Universite du Benin, African Medicinal Plants

S. Sims, Whitmire Microgen corporation, St Louis, botanical insecticides

D. Bergvinson, Gates foundation, formerly CGIAR International Maize Center, Mexico, Maize resistance to insects recently: ICRISAT

A. Mitchell, Australian Forestry Service, USC Canada, Ethnobotany of E Timor

R. Rojas, Universidad Cayetano Heredia, Lima Peru, Medicinal plants

R. Mata, R. Pereda UNAM, Mexico, Phytochemistry

H) Industrial collaboration

St Francis Herb farm, Canada

BASF, US

Amway Corp Nutrilite and Trout Lake Farm LLC, US

Clef des Champs, Canada

Bioniche Life Sciences, Canada

Herbon Naturals, Canada

Whitmire Microgen, US

AL
JTA

J) Most Significant Research Contributions

J1) Ethnobotany and traditional agriculture. Beginning with a 100-page review paper documenting traditional plant use by First Nations in Canada, we have published ethnobotanical research on indigenous plant use in Nunavut/ik, Central and South America, Central Borneo, E Timor, Bosnia and West Africa. Using a "two eyes seeing approach", we have contributed phytochemical and pharmacological expertise on over 2 dozen papers evaluating safety and efficacy of traditional ethnobotanical treatments for type 2 diabetes in northern Cree communities. In addition we have collaborated with Maya elders on the evaluation of plants for mental health and systems of traditional agriculture. The outcome has been the validation and reinforcement of traditional science for indigenous use.

J2) Natural Health Products. We completed the first taxonomic and photochemical revision of the genus *Echinacea* (Binns et al, 2002 *J. Agric. Food Chem.* **50**: 3673-3687) and were the first lab to document phytochemicals in herbals that inhibited P450 mediated drug metabolism (Budzinski et al *Phytomedicine*, **7**(4):273-82), a paper with over 180 citations. We have contributed several books including the recent "Edible and medicinal plants of Canada" (Lone Pine 2008). and have edited at least 4 peer reviewed symposia in the field, "Biodiversity and Health", NRC press (2005), "Natural Health Products"- special issue in *CJPhysiol. and Pharm.*, 2007, "Ethnobotany" special issue (2008) in *Can J. Bot.* Current work involves the application of metabolomics to the study of medicinal plants. Recently we discovered an antianxiety product which has now passed clinical testing in dogs for toxicity and efficacy, was test marked in Canada during 2014 and will reach the US market in 2016

J3) Chemical Ecology, plant defenses and application to crop protection. Our papers cover natural defenses of plants and defense theory. We established the existence of light activated polyacetylenes as defences in plants, phytochemical redundancy of defences, and antifeedants from the *Meliaceae*. Our work on phytochemical insect resistance is in use at the International Agriculture Centre in Mexico, CIMMYT to produce resistant corn varieties for tropical countries (see Garcia Lara 2007). A major review on essential oil insecticides was published (Regnault Roger et al 2012). Currently we are working on synergists to reduce the application and adverse impact of neonicotinoids.

J4) Phytochemical discovery. This is a career program of over 100 papers with Durst and tropical collaborators in Mexico, Costa Rica, Peru and Belize identifying active new bioactive phytochemicals in rainforest plants in the Americas. We were among the first to isolate limonoid insect antifeedants and antimalarials from the *Meliaceae*, and a new biosynthetic class of spiro-triterpenes (see Asim et al, 2007). At least 30 novel phytochemicals were identified. Recent research has identified traditionally used plants for anxiolytic and antiepileptic activity. US and Canadian patents for the use of plant natural products as insect repellents, for anxiety have been

J5 Ten important research papers from lifetime list.

1. Arnason, T., Hebda, R. J., & Johns, T. (1981). Use of plants for food and medicine by Native Peoples of eastern Canada. *Canadian Journal of Botany*, **59**(11), 2189-2325. 160 citations

This is a most highly cited article on CJB website describing the ethnobotanical use of 400 species in 2000 applications by 14 First Nations.

2. Lambert, J. D., & Arnason, J. T. (1982). Ramón and Maya ruins: an ecological, not an economic, relation. *Science*, **216**(4543), 298-299.

This article sets the record straight on controversial ancient land use in the Maya classic period.

AL
JTB

3. Regnault-Roger C, Vincent C, Arnason JT. Essential oils in insect control: low-risk products in a high-stakes world. Annual review of entomology. 2012 Jan 7;57:405-24. (577 citations) And Arnason, J. T., Philogene, B. J. R., & Morand, P. (1989). Insecticides of plant origin (359 citations). Two highly cited references for researchers in the field of natural product insecticides.

4. 8. MacKinnon, S., Durst, T., Arnason, J. T., Angerhofer, C., Pezzuto, J., Sánchez-Vindas, P. E., ... & Gbeassor, M. (1997). Antimalarial activity of tropical Meliaceae extracts and gedunin derivatives. Journal of Natural Products, 60(4), 336-341.

This paper(169 citations) describes new potent antimalarials substances isolated from plant sources

5. Budzinski, J. W., Foster, B. C., Vandenhoeck, S., & Arnason, J. T. (2000). An in vitro evaluation of human cytochrome P450 3A4 inhibition by selected commercial herbal extracts and tinctures. Phytomedicine, 7(4), 273-282. (457 citations)

This is a highly cited paper because it was the first to demonstrate the mechanism of Natural Health Product (NHP) drug interactions of a large number of NHPs and their active principles as the inhibition of the main enzyme that metabolizes drugs.

6. García-Lara, S., Bergvinson, D. J., Burt, A. J., Ramputh, A. I., Díaz-Pontones, D. M., & Arnason, J. T. (2004). The role of pericarp cell wall components in maize weevil resistance. Crop Science, 44(5), 1546-1552.

This paper (94 citations) identified resistance factors in maize that were used by the United Nation's International Wheat and Maize Improvement centre (CIMMYT) to breed seed for worldwide use.

7. Cappuccino, N., & Arnason, J. T. (2006). Novel chemistry of invasive exotic plants. Biology Letters, 2(2), 189-193.

We provide evidence of role of novel toxic compounds in invasive species (158 citations).

8. Guerrero-Analco JA, Martineau L, Saleem A, Madiraju P, Muham mad A, Durst T, Haddad P, **Arnason JT** 2010 Bioassay-guided isolation of the antidiabetic principle from *Sorbus decora* (Rosaceae) used traditionally by the Eeyou Istchee Cree First Nations. *J. Nat. Prod.* 73:1519-23.

In this major CIHR funded project on Cree ethnobotany we identified novel compounds with diabetic activity more potent than drugs.

9. Shang, Nan, Ammar Saleem, Lina Musallam, Brendan Walshe-Roussel, Alaa Badawi, Alain Cuerrier, J. T. Arnason, & Pierre S. Haddad. 2015. Novel Approach to Identify Potential Bioactive Plant Metabolites: Pharmacological and Metabolomics Analyses PloS one 10, no. 8: e0135721

Using the new technology of metabolomics we identified active principles for the first time using discriminant analysis.

10 Puniani, Eva, Christian Cayer, Pamela Kent, Martha Mullally, Pablo Sánchez-Vindas, Luis Poveda Álvarez, Victor Cal, Zul Merali, J. T. Arnason, & Tony Durst 2015. Ethnopharmacology of *Souroubea sympetala* and *Souroubea gilgii* (Marcgraviaceae) and identification of betulinic acid as an anxiolytic principle." *Phytochemistry* 113: 73-78.

This paper describes a novel anxiolytic botanical which has been developed as a canine noise aversion product.

K) Peer reviewed publications

2022

Arnason, J.T., Cuerrier, A. and Smith, M. Guest editors, *Botany* special issue, Feb 2022. Ethnobotany and Ethnopharmacology in the Americas <https://cdnsiencepub.com/toc/cjb/100/2>

Chen, Huang, Yu and Arnason, Guest editors, *Frontiers in Pharmacology: Ethnopharmacology* special issue, 2022. Medicinal Plants and Their Active Constituents in the Treatment of Metabolic Syndrome <https://www.frontiersin.org/research-topics/21916/>

Hall, B., Rapinski, M., Spoor, D., Eid, H., Saleem, A., Arnason, J.T., Foster, B., Cuerrier, A., Haddad, P.S. and Harris, C.S., 2022. A Multivariate Approach to Ethnopharmacology: Antidiabetic Plants of Eeyou Istchee. *Frontiers in pharmacology*, 12, p.511078.

Arnason JT, Harris CS and Guerrero-Analco JA (2022) Phytochemistry in the Ethnopharmacology of North and Central America. *Front. Pharmacol.* 13:815742. doi: 10.3389/fphar.2022.815742

Arnason, J., Cal, V., Pesek, T., Awad, R., Bourbonnais-Spear, N., Collins, S., Otarola-Rojas, M., Walshe-Roussel, B., Audet, P., Ta, C.A. and Balick, M., 2022. A review of ethnobotany and ethnopharmacology of traditional medicines used by Q'eqchi' Maya Healers of Xna'ajeb'aj Ralch'o'och', Belize. *Botany*, 100(2), pp.219-230.

Arnason, J., Marles, R., Harris, C. and Haddad, P., 2022. In Memoriam-Brian C. Foster, 1952-2021. *Journal of Natural Health Product Research*, 4(1), pp.1-2.

2021

Liu R, Burkett K, Rapinski M, Arnason JT, Johnson F, Hintz P, Baker J, Harris CS. Biochemometric analysis of fatty acid amide hydrolase inhibition by echinacea root extracts. *Planta Medica*. 2021 Apr;87(04):294-304.

Liu R, Salas NC, Li W, Wang L, Arnason JT, Harris CS. Interactions of Echinacea spp. root extracts and alkylamides with the endocannabinoid system and peripheral inflammatory pain. *Frontiers in pharmacology*. 2021;12:776.

Guerra-Grenier E, Liu R, Arnason JT, Sherratt TN. Chemical defense and tonic immobility in early life stages of the Harlequin cabbage bug, *Murgantia histrionica* (Heteroptera: Pentatomidae).

Harris CS, Arnason JT, Hall B, Haddad PS, Golsteyn RM, Chapman B, Smith MJ, Sidhu S, Ovadje P, Quach H, Ng JY. Canada and the Changing Global NHP Landscape: The 17th Annual Conference of the Natural Health Products Research Society of Canada. *Journal of Natural Health Product Research*. 2021 Jun 6;3(1).

Li S, Pasquin S, Saleem A, Eid HM, Le Campion A, Gauchat JF, Arnason JT, Haddad PS. Identification of Abietic Acid as A Key Component Responsible for The Renal Protective Action of *Abies Balsamea*, A Medicinal Plant of the Eastern James Bay Cree Pharmacopeia. *Metabolism-Clinical and Experimental*. 2021 Mar 1;116.

Masic A, Landsberg G, Milgram B, Merali Z, Durst T, Sanchez Vindas P, Garcia M, Baker J, Liu R, Arnason J. Efficacy of *Souroubea-Platanus* Dietary Supplement Containing Triterpenes in Beagle

PL
JTA

- Dogs Using a Thunderstorm Noise-Induced Model of Fear and Anxiety. *Molecules*. 2021 Jan;26(7):2049.
- Turner, Nancy J., J.T. Arnason, Richard J. Hebda, and T. Johns. "Traditional Plants and Indigenous Peoples in Canada." *The Canadian Encyclopedia*. Historica Canada. Article published January 18, 2012; Last Edited October 19, 2021.
- Li S, Pasquin S, Saleem A, Eid HM, Le Campion A, Gauchat JF, Arnason JT, Haddad PS. Identification of Abietic Acid as A Key Component Responsible for The Renal Protective Action of Abies Balsamea, A Medicinal Plant of the Eastern James Bay Cree Pharmacopeia. *Metabolism-Clinical and Experimental*. 2021 Mar 1;116.
- 2020**
- CS Harris and JT Arnason Trends in NHP research: Prospects and Challenges of Next Generation NHPs *Journal of Natural Health Product Research* 2: 1-6 DOI <https://doi.org/10.33211/jnhpr.13>
- J Ferrier, T Pesek, N Zinck, S Curtis, P Wanyerka, V Cal, M Balick, J Arnason, 2020 A Classic Maya Mystery of a Medicinal Plant and Maya Hieroglyphs *Heritage* 3 (2), 275-282
- Liu R, Burkett K, Rapinski M, Arnason JT, Johnson F, Hintz P, Baker J, Harris CS. Biochemometric analysis of fatty acid amide hydrolase inhibition by Echinacea root extracts. *Planta Medica*. 2020 Dec 9.
- CS Harris, T Vanderheyden, JT Arnason 2020 Extraction Technologies for Plant-derived Nutraceuticals and Natural Health Products *In PA Spagnuolo Nutraceuticals and Human Health: The Food-to-supplement Paradigm* 23, 412020 Royal Society of Chemistry
- AR Vargas, AH Gomez, R Liu, MO Rojas, PS Vindas, T Durst, JT Arnason 2020 In Vitro Culture of the New Anxiolytic Plant, *Souroubea Sympetala*, *Journal of Natural Health Product Research* 2 (1), 1-10.
- B Hall, M Rapinski, D Spoor, HM Eid, A Saleem, JT Arnason, B Foster, 2020 A Meta-analysis of the Anti-diabetes Ethnopharmacology of the Eeyou Istchee *Frontiers in Pharmacology* 11, 450
- 2019**
- Murkar, Anthony, et al. "Extract and Active Principal of the Neotropical Vine *Souroubea sympetala* Gilg. Block Fear Memory Reconsolidation." *Frontiers in pharmacology* 10 (2019): 1496.
- Merali Z, Cayer C, Kent P, Liu R, Cal V, Harris CS, Arnason JT. Sacred Maya incense, copal (Protium copal-Burseraceae), has antianxiety effects in animal models. *Journal of ethnopharmacology*. 2018 Apr 24;216:63-70.
- Barnes, J., Arnason, J.T. and Roufogalis, B.D., 2019. St John's wort (*Hypericum perforatum* L.): botanical, chemical, pharmacological and clinical advances. *Journal of Pharmacy and Pharmacology*, 71(1), pp.1-3.
- Francis Carballo-Arce A, Raina V, Liu S, Liu R, Jackiewicz V, Carranza D, Arnason JT, Durst T. Potent CYP3A4 Inhibitors Derived from Dillapiol and Sesamol. *ACS Omega*. 2019 Jun 24;4(6):10915-2
- Downing, A.D., Eid, H.M., Tang, A., Ahmed, F., Harris, C.S., Haddad, P.S., Johns, T., Arnason, J.T., Bennett, S.A. and Cuerrier, A., 2019. Growth environment and organ specific variation in in-vitro cytoprotective activities of *Picea mariana* in PC12 cells exposed to glucose toxicity: a plant used for treatment of diabetes symptoms by the Cree of Eeyou Istchee (Quebec, Canada). *BMC Complementary and Alternative Medicine*, 19(1), p.137
- Walshe-Roussel, B., Rojas, M.O., Vindas, P.S., Pesek, T., Cal, V. and Arnason, J.T., 2019. Ethnobotany of Immunomodulatory Treatments Used by the Q'eqchi' Maya of Belize. *Economic Botany*, pp.1-17.
- Liu R, Dobson CC, Foster BC, Durst T, Sanchez P, Arnason JT, Harris CS. Effect of an anxiolytic botanical containing *Souroubea sympetala* and *Platanus occidentalis* on in-vitro diazepam human cytochrome P450-mediated metabolism. *Journal of Pharmacy and Pharmacology*. 2019 Mar;71(3):429-37.
- Liu R, Carballo-Arce AF, Singh R, Saleem A, Rocha M, Mullally M, Otarola-Rojas M, Alvarrez LP, Sanchez-Vindas P, Garcia M, Baker J. A Selective Ion HPLC-APCI-MS Method for the Quantification of Pentacyclic Triterpenes in an Anxiolytic Botanical Dietary Supplement for the Animal Health Market. *Natural Product Communications*. 2019 Jan;14(1):1934578X1901400104.
- Ferrier, J., Saleem, A., Ramirez, A.C., Liu, R., Chen, E., Pesek, T., Cal, V., Balick, M. and Arnason, J.T., 2018. Traditional medicines used by Q'eqchi' Maya to treat diabetic symptoms and their antiglycation potential. *Journal of Ethnopharmacology*. In press
- Liu R, Dobson CC, Foster BC, Durst T, Sanchez P, Arnason JT, Harris CS. Effect of an anxiolytic botanical containing *Souroubea sympetala* and *Platanus occidentalis* on in-vitro diazepam human

JTA

- cytochrome P450-mediated metabolism. *Journal of Pharmacy and Pharmacology*. 2019 Mar;71(3):429-37.
- Burt, A.J., Arnason, J.T. and García-Lara, S., 2019. Natural variation of hydroxycinnamic acid amides in maize landraces. *Journal of Cereal Science*.
- Arnason JT, Figueroa M, Pereda-Miranda R, Oberlies NH. Special Issue in Honor of Professor Rachel Mata. *J Nat Products*
- Saleem A, Bell MA, Kimpe LE, Korosi JB, Arnason JT, Blais JM. Identifying novel treeline biomarkers in lake sediments using an untargeted screening approach. *Science of The Total Environment*. 2019 Dec 1;694:133684.
- Pebsworth PA, Hillier S, Wendler R, Glahn R, Ta CA, Arnason JT, Young SL. Geophagy among East African Chimpanzees: consumed soils provide protection from plant secondary compounds and bioavailable iron. *Environmental geochemistry and health*. 2019 Jul 5:1-7.
- 2018**
- Ferrier J, Saleem A, Ramirez AC, Liu R, Chen E, Pesek T, Cal V, Balick M, Arnason JT. Traditional medicines used by Q'eqchi' Maya to treat diabetic symptoms and their antiglycation potential. *Journal of ethnopharmacology*. 2018 Oct 5;224:504-11.
- Ly C, Ferrier J, Gaudet J, Yockell-Lelièvre J, Arnason JT, Gruslin A, Bainbridge S. *Vaccinium angustifolium* (lowbush blueberry) leaf extract increases extravillous trophoblast cell migration and invasion in vitro. *Phytotherapy research*. 2018 Apr;32(4):705-14.
- Merali Z, Cayer C, Kent P, Liu R, Cal V, Harris CS, Arnason JT. Sacred Maya incense, copal (*Protium copal-Burseraceae*), has antianxiety effects in animal models. *Journal of ethnopharmacology*. 2018 Apr 24; 216:63-70
- Masic A, Liu R, Simkus K, Wilson J, Baker J, Sanchez P, Saleem A, Harris CC, Durst T, Arnason JT. Safety evaluation of a new anxiolytic product containing botanicals *Souroubea* spp. and *Platanus* spp. in dogs. *Canadian Journal of Veterinary Research*. 2018 Jan 1;82(1):3-11.
- Ta CA, Pebsworth PA, Liu R, Hillier S, Gray N, Arnason JT, Young SL. Soil eaten by chacma baboons adsorbs polar plant secondary metabolites representative of those found in their diet. *Environmental geochemistry and health*. 2018 Apr 1;40(2):803-13.
- Durst T, Baker JD, Arnason JT, Wade JM, Merali Z, Mullally M, Cayer C, Alkemade SJ, Carballo AF, Velji I, inventors; University of Ottawa, assignee. Plant compositions and methods and uses thereof for treating elevated glucocorticoid related disorders, and anxiety. United States patent application US 10/004,773. 2018 Jun 26.
- López-Castillo LM, Silva-Fernández SE, Winkler R, Bergvinson DJ, Arnason JT, García-Lara S. Postharvest insect resistance in maize. *Journal of Stored Products Research*. 2018 Jun 1;77:66-76.
- Sanchez-Villavicencio ML, Elamer N, Joseph L, Saleem A, Hall B, Harris CS, Cayer C, Arnason JT, Haddad PS. Non-polar solvent fractions of *Oplopanax horridus* stimulate muscle glucose uptake and inhibit hepatocellular glucose-6-phosphatase enzyme activity. *Planta Medica International Open*. 2018 May;5(S 01):DM03.
- 2017**
- Ferrier, J; Saleem, A; Djeflal, S; Schlarb, J; Haddad, P; Balick, M; Cayer, A; Arnason, J. 2017 Relation of antiglycation activity of leaves of 8 traditionally used wild blueberry species (*Vaccinium* L.) from northern Canada and Europe to phytochemistry *Botany*, 95: 387-394 DOI 10.1139/cjb-2016-0216
- Liu, R., Ahmed, F., Cayer, C., Mullally, M., Carballo, A. F., Rojas, M. O., ... & Poveda, L. (2017). New Botanical Anxiolytics for Use in Companion Animals and Humans. *The AAPS Journal*, 1-6.
- Ferrier, J; Saleem, A; Djeflal, S; Schlarb, J; Haddad, P; Balick, M; Cayer, A; Arnason, J. 2017 Relation of antiglycation activity of leaves of 8 traditionally used wild blueberry species (*Vaccinium* L.) from northern Canada and Europe to phytochemistry *Botany*, 95: 387-394 DOI 10.1139/cjb-2016-0216
- Mullally, M., Mimeault, C., Rojas, M. O., Vindas, P. S., Garcia, M., Alvarez, L. P., ... & Arnason, J. T. (2017). A botanical extract of *Souroubea sympetala* and its active principle, betulinic acid, attenuate the cortisol response to a stressor in rainbow trout, *Oncorhynchus mykiss*. *Aquaculture*, 468, 26-31
- 2016**
- Murkar, A., Kent, P., Cayer, C., James, J., Arnason, J. T., Cayer, A., & Merali, Z. (2016). Nunavik *Rhodiola rosea* Attenuates Expression of Fear-Potentiated Startle. *Planta Medica International Open*, 3(04), e77-e80.

JTA

- Yong, Y., Saleem, A., Guerrero-Analco, J. A., Haddad, P. S., Cuerrier, A., Arnason, J. T., ... & Johns, T. (2016). Larix laricina bark, a traditional medicine used by the Cree of Eeyou Istchee: Antioxidant constituents and in vitro permeability across Caco-2 cell monolayers. *Journal of Ethnopharmacology*, 194, 651-657.
- Poveda-Alvarez, L. J., Sánchez-Vindas, P. E., & Arnason, J. T. *Guía dendrológica costarricense*. (ISBN 9968-870-01-3.).
- Mullally, M., et al. "Anxiolytic activity and active principles of Piper amalago (Piperaceae), a medicinal plant used by the Q'eqchi'Maya to treat susto, a culture-bound illness." *Journal of ethnopharmacology* 185 (2016): 147-154.
- Eid, H. M., Ouchfoun, M., Saleem, A., Guerrero-Analco, J. A., Walshe-Roussel, B., Musallam, L., ... & Haddad, P. S. (2016). A combination of (+)-catechin and (-)-epicatechin underlies the in vitro adipogenic action of Labrador tea (*Rhododendron groenlandicum*), an antidiabetic medicinal plant of the Eastern James Bay Cree pharmacopeia. *Journal of ethnopharmacology*, 178, 251-257.
- Ovadj, P., Ammar, S., Guerrero, J. A., Arnason, J. T., & Pandey, S. (2016). Dandelion root extract affects colorectal cancer proliferation and survival through the activation of multiple death signalling pathways. *Oncotarget*.
- Ouchfoun, M., Eid, H. M., Musallam, L., Brault, A., Li, S., Vallerand, D., ... & Haddad, P. S. (2016). Labrador tea (*Rhododendron groenlandicum*) attenuates insulin resistance in a diet-induced obesity.
- Saleem, A., Liu, R., Guerrero-Analco, J. A., Bailie, A., Foster, B., Cuerrier, A., ... & Arnason, J. T. (2016). An HPLC-ELSD Method for the Determination of Triterpenes in *Sorbus decora* and *Sorbus americana* Bark Used by the Eeyou Istchee Cree First Nation. *Planta medica*. mouse model. *European journal of nutrition*, 55(3), 941-954.
- Beaulieu, F., Cuerrier, A., Filion, V. J., Saleem, A., & Arnason, J. T. (2016). A gall mite, *Aceria rhodiolae* (Acar: Eriophyidae), altering the phytochemistry of a medicinal plant, *Rhodiola rosea* (Crassulaceae), in the Canadian Arctic. *Journal of Natural History*, 50(19-20), 1237-1263.
- Bailie, A., Renaut, S., Ubalijoro, E., Guerrero-Analco, J. A., Saleem, A., Haddad, P., ... & Cuerrier, A. (2016). Phylogeographic and genetic variation in *Sorbus*, a traditional antidiabetic medicine—adaptation in action in both a plant and a discipline. *PeerJ*, 4, e2645.
- Li, S., Brault, A., Sanchez Villavicencio, M., & Haddad, P. S. (2016). *Rhododendron groenlandicum* (Labrador tea), an antidiabetic plant from the traditional pharmacopoeia of the Canadian Eastern James Bay Cree, improves renal integrity in the diet-induced obese mouse model. *Pharmaceutical biology*, 1-9.

2015

- Shang, Nan, Ammar Saleem, Lina Musallam, Brendan Walshe-Roussel, Alaa Badawi, Alain Cuerrier, J. T. Arnason, & Pierre S. Haddad. 2015. Novel Approach to Identify Potential Bioactive Plant Metabolites: Pharmacological and Metabolomics Analyses of Ethanol and Hot Water Extracts of Several Canadian Medicinal Plants of the Cree of Eeyou Istchee. *PloS one* 10, no. 8: e0135721.
- Bieski, I. G. C., Leonti, M., Arnason, J. T., Ferrier, J., Rapinski, M., Violante, I. M. P., & de Oliveira Martins, D. T. 2015. Ethnobotanical study of medicinal plants by population of Valley of Juruena Region, Legal Amazon, Mato Grosso, Brazil. *Journal of ethnopharmacology*, 173, 383-423.
- Cieniak, Carolina, Charlotte McDonald, John Nash, Asim Muhammad, Alaa Badawi, Pierre S. Haddad, Alain Cuerrier, Steffany AL Bennett, Brian C. Foster, & J. T. Arnason. 2015. Evaluation by microarray of the potential safety of *Sarracenia purpurea* L. (Sarraceniaceae) a traditional medicine used by the Cree of Eeyou Istchee. *Journal of Pharmacy & Pharmaceutical Sciences* 18: 562-577.
- Cieniak, Carolina, Brendan Walshe-Roussel, Rui Liu, Asim Muhammad, Ammar Saleem, Pierre S. Haddad, Alain Cuerrier, Brian C. Foster, & J. T. Arnason. 2015. Phytochemical Comparison of the Water and Ethanol Leaf Extracts of the Cree medicinal plant, *Sarracenia purpurea* L. (Sarraceniaceae). *Journal of Pharmacy & Pharmaceutical Sciences* 18: 484-493.
- Carballo-Arce, Ana Francis; Ta, Chieu Anh; Rocha, Marco Eduardo do Nascimento; Liu, Rui; Harmsen, Irene; Mogg, Christopher D.; Otárola-Rojas, Marco; Garcia, Mario; Sanchez-Vindas, Pablo; Poveda, Luis; Subramaniam, Rajagopal; Smith, Myron L.; Kaplan, Maria Auxiliadora Coelho; Figueiredo, Maria Raquel; Durst, Tony; & J. T. Arnason. 2015. Antimicrobial activities of Marcgraviaceae species and isolation of a naphthoquinone from *Marcgravia nervosa* (Marcgraviaceae). *Botany* 93: 413-24.

JTA

- Rapinski, Michel Musallam, Lina, **Arnason, J. T.**, Haddad Pierre S. & Cuerrier Alain 2015. Adipogenic activity of wild populations of *Rhododendron groenlandicum*, a medicinal shrub from the James Bay Cree traditional pharmacopeia, *Evidence-Based Complementary and Alternative Medicine* 501: 492458.
- Ly, Christina; Yockell-Lelièvre, Julien; Ferraro, Zachary M; **Arnason, J. T.**; Ferrier, Jonathan; Gruslin, Andrée; 2015. The effects of dietary polyphenols on reproductive health and early development. *Human reproduction update* 21:228-248.
- Puniani, Eva, Christian Cayer, Pamela Kent, Martha Mullally, Pablo Sánchez-Vindas, Luis Poveda Álvarez, Victor Cal, Zul Merali, **J. T. Arnason**, & Tony Durst 2015. Ethnopharmacology of *Souroubea sympetala* and *Souroubea gilgii* (Marcgraviaceae) and identification of betulinic acid as an anxiolytic principle." *Phytochemistry* 113: 73-78.
- Nachar, Abir, Ammar Saleem, **J. T. Arnason**, & Pierre S. Haddad. 2015. Regulation of liver cell glucose homeostasis by dehydroabietic acid, abietic acid and squalene isolated from balsam fir (*Abies balsamea* (L.) Mill.) a plant of the Eastern James Bay Cree traditional pharmacopeia. *Phytochemistry* 117: 373-379.
- Ouchfoun, Meriem, Hoda M. Eid, Lina Musallam, Antoine Brault, Shilin Li, Diane Vallerand, **John T. Arnason**, & Pierre S. Haddad 2015. Labrador tea (*Rhododendron groenlandicum*) attenuates insulin resistance in a diet-induced obesity mouse model. *European journal of nutrition* : 1-14.
- do Nascimento Rocha, Marco Eduardo, Maria Raquel Figueiredo, Maria Auxiliadora Coelho Kaplan, Tony Durst, & **John Thor Arnason** 2015. Chemotaxonomy of the Ericales." *Biochemical Systematics and Ecology* 61: 441-449.
- OVADJE, Pamela, Alessia Roma, Matthew Steckle, Leah Nicoletti, **John Thor Arnason**, and Siyaram Pandey 2015. Advances in the Research and Development of Natural Health Products as Main Stream Cancer Therapeutics. *Evidence-Based Complementary and Alternative Medicine* ().
- Ta CA, Guerrero-Analco JA, Roberts E, Liu R, Mogg CD, Saleem A, Otárola-Rojas M, Poveda L, Sanchez-Vindas P, Cal V, Caal F. Antifungal Saponins from the Maya Medicinal Plant *Cestrum schlechtendahl* G. Don (Solanaceae). *Phytotherapy Research*. 2015 Jan 1.
- 2014**
- Rapinski, Michel; Liu, Rui; Saleem, Ammar; Arnason, **John Thor Arnason**, Cuerrier, Alain; 2014. Environmental trends in the variation of biologically active phenolic compounds in Labrador tea, *Rhododendron groenlandicum*, from northern Quebec, *Canada Botany* 92: 999-01
- Ly, Christina; Yockell-Lelièvre, Julien; Ferraro, Zachary M; **Arnason, John T**; Ferrier, Jonathan; Gruslin, Andrée; 2014. The effects of dietary polyphenols on reproductive health and early development. *Human reproduction update* 21:228-248
- Picard, G; Valadeau, C; Albán-Castillo, J; Rojas, R; Starr, JR; Callejas-Posada, R; Bennett, SAL; **Arnason, JT**; 2014 Assessment of in vitro pharmacological effect of Neotropical Piperaceae in GABAergic bioassays in relation to plants traditionally used for folk illness by the Yaneshas (Peru). *Journal of Ethnopharmacology* 155:1500-1507
- Wang, Zhiling; Zhao, Zhong; Abou-Zaid, Mamdouh M; **Arnason, John T**; Liu, Rui; Walshe-Roussel, Brendan; Wayne, Andrew; Liu, Suqi; Saleem, Ammar; Cáceres, Luis A; 2014. Inhibition of insect glutathione s-transferase (GST) by conifer extracts. *Archives of insect biochemistry and physiology* 87: 234-249.
- OVADJE, Pamela; Ma, Dennis; Tremblay, Phillip; Roma, Alessia; Steckle, Matthew; Guerrero, Jose-Antonio; **Arnason, John Thor**; Pandey, Siyaram; 2014. Evaluation of the Efficacy & Biochemical Mechanism of Cell Death Induction by *Piper longum* Extract Selectively in In-Vitro and In-Vivo Models of Human Cancer Cells. *PloS one* 9:11, e113250
- Puniani E, Cayer C, Kent P, Mullally M, Sánchez-Vindas P, Poveda Álvarez L, Cal V, Merali Z, Arnason **J.T. Arnason**, T. Durst 2014. Ethnopharmacology of *Souroubea sympetala* and *Souroubea gilgii* (Marcgraviaceae) and identification of betulinic acid as an anxiolytic principle. *Phytochemistry* doi: 10.1016
- Liu, S. Q.; Scott, I. M.; Pelletier, Y.; K. Kramp, T. Durst, S. R. Sims, & **J. T. Arnason** 2014. Dillapiol: A Pyrethrum Synergist for Control of the Colorado Potato Beetle *J. Econ. Entomol.* 107: 797- 797-805.
- Arnason, J.T.**, Yack, J.E., & Smith, M.L. 2014. Alkamides from Echinacea disrupt the fungal cell wall-membrane complex. *Phytomedicine* 21: 435-442.

- Harris, C.S., Cuerrier, A., Lamont, E., Haddad, P.S., Arnason, J.T., Bennett, S.A.L., & **J. T. Arnason** 2014. Investigating Wild Berries as a Dietary Approach to Reducing the Formation of Advanced Glycation Endproducts: Chemical Correlates of In Vitro Antiglycation Activity. *Plant Foods for Human Nutrition* 69: 71-77.
- Necyk, C., Tsuyuki, R.T., Boon, H., Foster, B.C., LeGatt, D., Cembrowski, G., Murty, M., Barnes, J., Charrois, T.L., **Arnason, J.T.**, Ware, M.A., Rosychuk, R.J., & Vohra, S. 2014. Pharmacy study of natural health product adverse reactions (SONAR): a cross-sectional study using active surveillance in community pharmacies to detect adverse events associated with natural health products and assess causality. *BMJ Open*. Mar 28;4(3):e003431. doi: 10.1136/bmjopen-2013-003431
- Waye, A., Annal, M., Tang, A., Picard, G., Harnois, F., Guerrero-Analco, J.A., Saleem, A., Hewitt, L.M., Milestone, C.B., MacLatchy, D.L., Trudeau, V.L., & **Arnason, J.T.** 2014. Canadian boreal pulp and paper feedstocks contain neuroactive substances that interact in vitro with GABA and dopaminergic systems in the brain. *Sci. Total Environ.* 468: 315-325.
- Harris CS, Cuerrier A, Lamont E, Haddad PS, **Arnason JT**, Bennett SA, & Johns T. 2014 Investigating wild berries as a dietary approach to reducing the formation of advanced glycation endproducts: chemical correlates of in vitro antiglycation activity. *Plant Foods Hum Nutr.* 69:71-77.
- Guerrero-Analco JA, Muhammad A, Saleem A, Martineau LC, Musallam L, EidHM, Shang N Black P, Currier A, Haddad PS & **Arnason JT** 2013 Bioactive Phytochemicals from Canadian Boreal Forest Species Used Traditionally by Eastern James Bay Cree Aboriginals to Treat Diabetes Mellitus. *Recent Advances in Phytochemistry* 44: 57-84

2013

- Yuk, J., McIntyre, K.L., Fischer, C., Hicks, J., Colson, K.L., Lui, E., Brown, D., & **Arnason, J.T.** 2013. Distinguishing Ontario ginseng landraces and ginseng species using NMR-based metabolomics. *Analytical and Bioanalytical Chemistry* 405: 4499-4509.
- Walshe-Roussel, B., Choueiri, C., Saleem, A., Asim, M., Caal, F., Cal, V., Otarola Rojas, M., Pesek, T., Durst, T., & **Arnason, J.T.** 2013. Potent anti-inflammatory activity of sesquiterpene lactones from *Neurolaena lobata* (L.) R. Br. ex Cass., a 'Q'eqchi' Maya traditional medicine. *Phytochemistry* 92: 122-127.
- Ly, C., Yockell-Lelievre, J., Saciragic, L., Saleem, A., Ferrier, J., **Arnason, J.T.**, & Gruslin, A. 2013. *Vaccinium Angustifolium* Var. *Laevifolium* House (Lowbush Blueberry) Leaf Extract Increases Trophoblast Migration. *Placenta* 34: A95-A96.
- Muhammad, A., Haddad, P.S., Durst, T., & **Arnason, J.T.** 2013. Phytochemical constituents of *Sarracenia purpurea* L. (pitcher plant). *Phytochemistry* 94: 238-242.
- Cayer, C., Ahmed, F., Filion, V., Saleem, A., Cuerrier, A., Allard, M., Rochefort, G., Merali, Z., & **Arnason, J.T.** 2013. Characterization of the Anxiolytic Activity of Nunavik *Rhodiola rosea*. *Planta Med.* 79: 1385-1391.
- Cieniak, C., Liu, R., Fottinger, A., Smiley, S.A.M., Guerrero-Analco, J.A., Bennett, S.A.L., Haddad, P.S., Cuerrier, A., Saleem, A., **Arnason, J.T.**, and Foster, B.C. 2013. In vitro inhibition of metabolism but not transport of gliclazide and repaglinide by Cree medicinal plant extracts. *J. Ethnopharmacol.* 150: 1087-1095.
- Audet, P., Walshe-Roussel, B., Cal, V., Caal, F., Rojas, M.O., Vindas, P.S., Poveda, L., **Arnason, J.T.** 2013 Indigenous Ex Situ Conservation of Q'eqchi' Maya Medicinal Plant Resources at the Itzamma Garden-Indian Creek, Belize, Central America. *Human Ecology* 41: 313-324
- Harbilas, D.; Vallerand, D.; Brault, A. **Arnason, JT** et al 2013. *Populus balsamifera* Extract and Its Active Component Salicortin Reduce Obesity and Attenuate Insulin Resistance in a Diet-Induced Obese Mouse Model. *Evidence-Based Complementary and Alternative Medicine*. Doi: 10.1155/2013/172537

PATENTS



Durst, Tony, John Douglas Baker, John Thor Arnason, Jose Miguel Wade, Zulfiquar Merali, Martha Mullally, Christian Cayer, Stanley J. Alkemade, Ana Francis Carballo, and Iqbal Velji. "plant compositions and methods and uses thereof for treating elevated glucocorticoid related disorders, and anxiety." U.S. Patent 20,150,283,190, issued October 8, 2015. Also . PCT patent Filed 8-Nov-2013. BLSI No. 920-CR1-WO

Durst, Tony, Zulfiquar Merali, Christian Cayer, John Thor Arnason, and John Douglas Baker. "Compounds for Reducing Glucocorticoids, and Methods of Treatment Thereof." U.S. Patent 20,150,272,922, issued October 1, 2015. Also PCT application Filed 8-Nov-2013. BLSI No. 921-CR2-WO

Arnason J T, Durst T, Foster B New benzodioxole derivative useful as synergist, preferably pharmacoenhancer or pesticide synergist, for controlling insect chosen from coddling moth, flies, cockroaches, fire ants, Tribolium and other insect products **Assignee:** UNIV OTTAWA, CANADA MIN HEALTH

JTH