

April 16, 2019

Governors Clemency Office

4294 Mail Service Center

Raleigh, NC 27699

E-mailed to: Clemency@NC.Gov

Please review the extenuating circumstances surrounding my criminal case in North Carolina and consider granting this request for a state pardon.

I have been incarcerated for over 10 months on charges relating to Ayahuasca. I am a victim of aggressive prosecution who is without knowledge of the chemistry or natural origins of Ayahuasca.

I am 46 years old. I have never had a drug charge prior to my recent visit to Ashe county. I am a professional medicine researcher. I was employed by Siemens Medical Systems where I worked in oncology developing linear accelerator control systems used world-wide. I also reported to executive management of Kaiser Permanente where I presented hospital wide architecture designs to the Board of Directors. Recently I published medicine research reports in the area of Alzheimers treatment at ResearchGate.NET. I am also an expert in software algorithm design and publish a popular project at CodeProject.com titled XMLFoundation.

I research many natural plant medicines, however my area of expertise is with Syrian Rue also known as *Peganum Harmala*. I own the Internet domain SyrianRue.org which is a research information portal where collective findings from research teams world wide are represented on the topic of Syrian Rue. Excerpts from some of the following sources are published there.

Journal of Microbiology Research	- 2016
International Journal of Biosciences	- 2016
Journal of Renal Injury Prevention	- 2017
Phytomedicine	- 2013
European Journal of Pharmacology	- 2011
Cholestoral	- 2016
Iran Journal of Pharmaceutical Research	- 2016
Journal of Dentistry	- 2016
International Journal of Dermatology	- 1980
American Chemical Society	- 2017
American Society of Pharmacognosy	- 2017
Journal of Essential Oil Bearing Plants	- 2013
Journal of Drug Targeting	- 2004
Journal of Metabolic Diseases	- 2015
Archives of Pharmacal Research	- 2007
Toxins	- 2017
Cancer and Biological Therapy	- 2007
Mutagenesis	- 2007

ResearchGate.NET is the single largest online gathering of professional and academic researchers on earth. I have been a member at ResearchGate for 7 years. I was approved to publish as an "Independent Researcher". Wall Street Journal has called ResearchGate.NET "The future of medicine research". I am affiliated with the most accredited and respected gathering of medicine researchers on earth.

Attached to this letter is an excerpt from my own website - SyrianRue.org as well as my publication titled "Neurodegenerative Disease Cure 2018" which can also be found online at ResearchGate.NET published under my name: Brian Aberle

There is overwhelming evidence that the purpose of the laboratory equipment in my home was for medicine research work. Amid the 138 items confiscated from my home was 20 kilos of Syrian Rue which is an unregulated plant and all medicine extracts produced from Syrian Rue are also unregulated. Syrian Rue is the source of MAOI and AChEI medicines which are both Beta Carbolines. Both medicines work by inhibiting enzymes. MAOI's are anti-depressants and AChEI's are the best known treatment for Alzheimers and other neurodegenerative diseases.

Please bear with a little more scientific detail about my work. Beta Carbolines are closely related to tryptamines. Many plant sources of tryptamines are also sources of beta carbolines such as North Carolinas own *Phalaris arundinacea* grass.

The tryptamine DMT plays an exceptional role in life on earth. Like water, DMT exists in all living things - both plant and animal. TetraHydroBetaCarboline (THBC) and 2-methoxy-THBC are both natural metabolites of DMT therefore because DMT is endogenous (naturally present) in all humans, so are the THBC metabolites. Perhaps no area of medicine or chemistry is more organic and natural as this.

All tryptamines have a 2 carbon chain with a nitrogen attached to a foundational aromatic carbon ring. As part of human metabolism and phytochemistry the 2 carbon chain becomes extended and closes into an adjoining ring called the pyridine ring which attaches to the indole ring creating the beta carboline. These are very closely related areas of medicine. They are found together in nature. DMT is the metabolic precursor to THBC. Ayahuasca is a traditional Ayurvedic medicine containing DMT and a beta carboline enzyme inhibitor which is an MAOI.

A rather large pile of grass harvested from my front yard produced about 100 milligrams of DMT. I photo journaled the entire process and total yield. The photographs are on my laptop which was confiscated by Ashe county sheriffs. Alexander Shulgin is a chemist and medicine researcher who has been called by the DEA to provide expert witness testimony on other criminal cases. Mr. Shulgin says that 100 milligrams is less than one oral dose. The entire raid on my home produced less than 100 milligrams of DMT which was the only controlled substance found.

I am charged with "Manufacturing DMT". Technically, brewing a cup of coffee does not constitute manufacturing caffeine. Plants manufactured the caffeine which was extracted by water. Even the isolation of pure caffeine is not the same as manufacturing caffeine. None of the chemical precursors for manufacturing DMT were present in my home. According to Alexander Shulgin a synthetic process for manufacturing DMT requires: Indole, oxalyl chloride, t-butylmethylether, dimethylamine, anhydrous tetrahydrofuran, Lithium Aluminum Hydride, dioxane and magnesium sulfate. I had none of these items in my home required for bulk manufacturing DMT. I extracted juice from grass.

I did have a chemistry laboratory, however the absence of controlled substances other than the miniscule amount of DMT found and the presence of beta carboline extracts in quantity indicates the truth about my activities.

I also extract essential oils because they are essential to medicine. Pounds of frankincense and myrrh resin were confiscated. The essential oils from these plants contain the 6 carbon aromatic ring which is essentially the foundation to countless medicines. My essential oil steam distillation setup with reflux and condensation columns were amid the 138 items which were unlawfully confiscated from my home. All the evidence points toward the truth - truth that Ashe county detectives and prosecution deliberately ignores.

The search warrant for my home was expected to find "large amounts of cash which is common in the drug trafficking trade". No cash was found. The search warrant for data on my laptop was expected to find ledgers of controlled substance sales. No such records exist on the laptop. No sales were ever made. Nobody claims to have obtained any controlled substances from me. I am charged with "Manufacturing for Sales" although it is contrary to all evidence.

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Ashe county officials seek to advance their careers at the expense of mine. They seek to manufacture a "drug trafficking bust" as they reported to the local newspapers. I charge that the story is "Defamation of Character".

Ashe county has little regard for American ideals in justice. The premise of "Innocent until proven guilty" is foreign in Ashe county. The Bill of Rights forbids "Unreasonable Searches" and states "Excessive bail shall not be required". My bond is set at \$350,000. The North Carolina guidelines for class H felonies is \$2,500. This constitutes "False Imprisonment". Pretrial detention significantly hinders my ability to prepare for a fair trial. These issues are currently before the federal court for the Western District of North Carolina with federal docket #5:19-cv-00024-FDW assigned to Chief Judge Frank D. Whitney on 3/7/2019

Please review the full text of the federal case which is filed as a U.S.C. 1983 civil rights violation. The lawsuit is published online at SyrianRue.org

In addition to Due Process of Law failure at a federal level - it has failed at a State level as well. District Court "continued" my case 4 times and denied my motion for a "Probable Cause" hearing.

In Caldwell county any case which does not proceed to a "Probable Cause" hearing within 30 days is dismissed. To my understanding this is to be in compliance with North Carolina state law. Ashe county makes no attempt to honor state or federal mandates in justice therefore creating a place with no law at all.

The law provides a resolution to my situation. I hope that the Governors Office finds that this is a proper case for clemency because the U.S. Supreme Court has ruled that Ayahuasca is protected by the U.S. Constitution as a religious right. Recently the popularity of Ayahuasca has increased - partly due to television shows like "Kentucky Ayahuasca" which operates legally with valid permits and documents how Ayahuasca can be used to help people overcome destructive addictions to opiates, alcohol, or methamphetamine. There is already an "Ayahuasca Church" in North Carolina.

I am seeking to obtain permits for Ayahuasca which I do in fact use in religious ceremony. Amid the 138 items unlawfully confiscated was an oil lamp modified to burn incense. Exodus 30 describes the "Altar of Incense" which burns myrrh, cinnamon, and calamus (V. 23) These and other items such as frankincense (Lev 2:15-16) which I use in ceremony were confiscated and documented.

I also practice the "art of apothecary" (Exodus 30:25) which requires the essential oil steam distillation device which was also confiscated. I am experienced with the spiritual and medicinal values of essential oils as practiced traditionally by several cultures.

Dietary laws put into effect by Moses (no pork, no yeast) must be followed when eating or smoking plants that contain an MAOI. Modern medicinal science calls this "The MAOI Diet" which technically is a diet without tyramine. The consecration of a priest involves being in the smoke filled tabernacle for 7 days (Lev 8:33). Jesus is High Priest and Messiah even of the prophet Muhammed who wrote in the Quran that "no smoke rises to heaven faster than the smoke of Syrian Rue". These practices are based in ancient wisdom and are rightly protected by the highest law in the United States.

I have worked with these spiritual tools at the sacred ceremonial site of the Taino in Puerto Rico and at an ancient ceremonial site right here in North Carolina in Black Mountain. The site in Black Mountain was founded by a former CIA agent who practiced "out of body remote viewing" for the U.S. Government. The sanctuary he founded is in a dome built over an indian portal. You can read more about it at URLight.org

I hope that the Governors Office will uphold the spirit of the law by protecting my right to Freedom of Religion. As the evidence suggests, I was using this medicine in a religious and spiritual setting and therefore qualify for protection from persecution by legal authorities who lack spiritual and scientific knowledge.

I am educated at the cross roads of medicinal and spiritual. Please review the publication of mine titled "Neurodegenerative Disease Cure" which documents much of what is known about "Neurogenesis" which apart from being preventative for Alzheimers is literally the birth of new brain matter thought to increase intelligence. Leonardo Da Vinci wrote that Syrian Rue is "miracle smart nutrient". I hope to help society. I have been incarcerated for 10 months already and the Ashe County District Attorney is seeking 16 to 38 months incarceration in the North Carolina State prison system.

Please review the U.S.C. 1983 lawsuit published at SyrianRue.org which contains additional information about my criminal case - I will reiterate some of that information here for your convenience. I expect that you will see this is ultimately a case of Malicious Prosecution.

I had recently relocated to North Carolina from the Caribbean islands where I was researching plants native to that area. The owner of the neighboring property had a long standing dispute with the owner of the property that I was renting. The neighbor did not want to live next to a rental property.

I have medical permits to carry less than a pound of marijuana - and I was smoking it in the front yard. The neighbor called the police. The police entered my home without my permission. They had no search warrant and ignored my explicit denial of permission to enter my home. The police found 11 ounces of marijuana. I was arrested and the magistrate judge Sherman Lee set bail at \$30,000 with a "Cash Only" stipulation so that neither a property bond nor a bondsman could be used to secure my freedom. An outrageous bond anywhere in the United States this is unarguably "Excessive Bail".

After two months in the filthy jail with lice and skin infections, under duress I was forced to sign a plea finding me guilty of 3 felonies for the marijuana which I never sold and had permits for. This put me on felony probation.

I explained to Timothy Moretz, my probation officer, that I do neuromedicine research from plant extracts. I have been self employed since 1995 and I was currently working from home as a computer network consultant for BeanWerks - a coffee importer in Asheville. I explained that my primary work was with holistic medicine and plant medicines. Timothy discredited nonconventional medicine, voiced his disbelief toward my honest employment, and threatened to violate my probation at his earliest convenience.

Over the next weeks I saw that Timothy's threat was real by all the unusual activity of Sheriff's officers on my very rural property. I called the FBI in Atlanta to report the threats made by my probation officer. I explained to the FBI more details of the sheriff's unusual activity. Please call the FBI in Atlanta yourself and obtain the transcripts of those calls. I attempted to report the misconduct taking place.

On questionably legitimate grounds, a search warrant was obtained for my property. Execution of that warrant was "a fiasco" in the words of Michael Sheron from the NC State Bureau of Investigations in an email dated June 26, 2018 to Collin Shuford from the NC State Crime Lab.

M.Sheron@ncsbi.gov → C.Shuford@ncdoj.gov
336-338-1505 828-654-0525

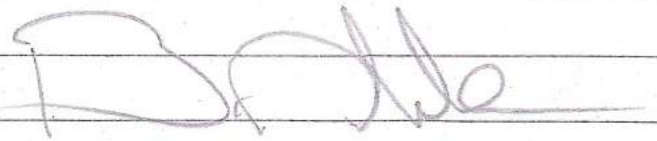
The Health Dept. was called to dismantle a meth lab but they determined it was not a meth lab and therefore had no legal jurisdiction to dismantle it. Several fire departments were dispatched to render a suspected explosive device safe. Experts determined that my oil lamp was not an explosive device. Many bags of pink, tan, and brown substances were identified as properly labeled salt and incense. The entire fiasco produced less than $\frac{1}{10}$ th of a gram of DMT. Thousands of dollars in property was confiscated.

I was imprisoned. The filthy jail was spreading skin rashes. There were many ear infections and several lice outbreaks. I prompted the Dept. of Health to inspect the jail on August 31, 2018 (Inspection #88808). Moldy mattresses caused a non-passing score. Angered by the surprise inspection ACSO filed retaliatory charges against me 3 days after the inspection on my case that was 77 days old and had no new evidence.

The new charges claim that 320 grams of pure liquid DMT was found. They claim that solvent with trace amounts of DMT is pure DMT. In reality that Naphtha solvent contained no more than a fraction of a gram. Facts of science demand that 1000's of pounds of grass are required to produce 320 grams of DMT. The evidence was proof that nothing of that scale took place.

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A conviction of an untrue drug charge will severely hinder my professional work with medicine research that aims to advance society. A conviction would dishonor truth and American ideals in justice. I hope that the Governors Office will find it proper to administer justice with a pardon in this situation.

God Bless Your Work,



Allegheny County Jail

c/o Brian Aberle

P.O. Box 68

Sparta NC 28675

STATE OF NORTH CAROLINA

ASHE

County

File No.

18CRS050893

In The General Court Of Justice
Superior Court Division

STATE VERSUS

Name And Address Of Defendant

BRIAN TROY ABERLE
5493 THREE TOP ROAD

CRESTON

NC

28615

INDICTMENT

Race

W

Sex

M

Date Of Birth

09/18/1972

☐ This is a superseding indictment.

Offense(s)

Date Of Offense
OR
Date Range Of Offense

G.S. No.

CL.

I. PWIMSD SCHEDULE I CONTROLLED SUBSTANCE

06/21/2018

90-95(a)(1)

H

II.

I. The jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

possess with the intent to manufacture, sell and deliver a controlled substance, namely Dimethyltryptamine, which is included in Schedule I of the North Carolina Controlled Substances Act.

II. And the jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

Signature Of Prosecutor

Rue Bollinger

WITNESSES

☒ J. Stout (ACSO)

☐

☐

☐

☐

☐

☐

☐

The Witnesses marked "X" were sworn by the undersigned Foreperson of the Grand Jury and, after hearing testimony, this Bill was found to be:

☒ A TRUE BILL by twelve or more grand jurors, and I the undersigned Foreperson of the Grand Jury, attest the concurrence of twelve or more grand jurors in this Bill of Indictment.

☐ NOT A TRUE BILL.

Date

11/13/18

Signature Of Grand Jury Foreperson

JBW

STATE OF NORTH CAROLINA

File No.

18CRS050638

ASHE

County

In The General Court Of Justice
Superior Court Division

STATE VERSUS

Name And Address Of Defendant

BRIAN TROY ABERLE
5493 THREE TOP ROAD

CRESTON

NC

28615

Race

W

Sex

M

Date Of Birth

09/18/1972

INDICTMENT

☐ This is a superseding indictment.

Offense(s)

Date Of Offense
OR
Date Range Of Offense

G.S. No.

CL.

I. POSSESS SCHEDULE I CONTROLLED SUBSTANCE

06/21/2018

90-95(a)(3)

I

II.

I. The jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

possess a controlled substance, Psilocybin mushrooms, which is included in Schedule I of the North Carolina Controlled Substances Act.

II. And the jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

Signature Of Prosecutor

Lee Bellinger

WITNESSES

☒ J. Stout (ACSO)

☐

☐

☐

☐

☐

☐

☐

The Witnesses marked "X" were sworn by the undersigned Foreperson of the Grand Jury and, after hearing testimony, this Bill was found to be:

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☐ NOT A TRUE BILL.

Date

11/13/18

Signature Of Grand Jury Foreperson

[Signature]

STATE OF NORTH CAROLINA

File No.

18CRS050892

ASHE

County

In The General Court Of Justice
Superior Court Division

STATE VERSUS

Name And Address Of Defendant

BRIAN TROY ABERLE
5493 THREE TOP ROAD

CRESTON

NC

28615

Race

W

Sex

M

Date Of Birth

09/18/1972

INDICTMENT

☐ This is a superseding indictment.

Offense(s)	Date Of Offense OR Date Range Of Offense	G.S. No.	CL.
I. MANUFACTURE SCHEDULE I CONTROLLED SUBSTANCE	06/21/2018	90-95(a)(1)	H
II. FELONY POSSESSION OF SCHEDULE I CONTROLLED SUBSTANCE	06/21/2018	90-95(a)(3)	I

I. The jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

manufacture Dimethyltryptamine, which is included in Schedule I of the North Carolina Controlled Substances Act. The manufacture consisted of producing, preparing, compounding and processing the controlled substance by mean of chemical synthesis, which took place at the defendant's residence by using the extraction method.

II. And the jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

possess a controlled substance, Dimethyltryptamine, which is included in Schedule I of the controlled substances act.

Signature Of Prosecutor

Lee Bellinger

WITNESSES

<input checked="" type="checkbox"/> J. Stout (ACSO)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The Witnesses marked "X" were sworn by the undersigned Foreperson of the Grand Jury and, after hearing testimony, this Bill was found to be:

☒ A TRUE BILL by twelve or more grand jurors, and I the undersigned Foreperson of the Grand Jury, attest the concurrence of twelve or more grand jurors in this Bill of Indictment.

☐ NOT A TRUE BILL.

Date

11/13/18

Signature Of Grand Jury Foreperson

[Signature]

STATE OF NORTH CAROLINA

File No.

18CRS050658

ASHE

County

In The General Court Of Justice
Superior Court Division

STATE VERSUS

Name And Address Of Defendant

BRIAN TROY ABERLE
5493 THREE TOP ROAD

CRESTON

NC

28615

INDICTMENT

☐ This is a superseding indictment.

Race	Sex	Date Of Birth	Offense(s)	Date Of Offense OR Date Range Of Offense	G.S. No.	CL.
W	M	09/18/1972	I. POSSESS WITH INTENT TO MANUFACTURE PRECURSOR - NOT METH	06/21/2018	90-95(d1)(1)a	H
			II. FELONY MAINTAIN V/D/P CONTROLLED SUBSTANCE	06/21/2018	90-108(a)(7)	I

I. The jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

possess an immediate precursor chemical, Ammonium Nitrate, Camp Fuel, Ether Based Starting Fluids, Hydrochloric Muriatic Acid, Sulfuric Acid, with the intent to manufacture a controlled substance, Dimethyltryptamine, which is included in Schedule I of the North Carolina Controlled Substances Act.

II. And the jurors for the State upon their oath present that on or about the date(s) of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

knowingly and intentionally keep and maintain a dwelling house located at 5493 Three Top Road, Todd, North Carolina, that was used for the keeping and selling of a controlled substance, Dimethyltryptamine, which is included in Schedule I of the North Carolina Controlled Substances Act.

Signature Of Prosecutor

Lee Bollinger

WITNESSES

<input checked="" type="checkbox"/> J. Stout (ACSO)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

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☒ A TRUE BILL by twelve or more grand jurors, and I the undersigned Foreperson of the Grand Jury, attest the concurrence of twelve or more grand jurors in this Bill of Indictment.

☐ NOT A TRUE BILL.

Date

11/13/18

Signature Of Grand Jury Foreperson

T. H. C.

**U.S. District Court
Western District of North Carolina (Statesville)
CIVIL DOCKET FOR CASE #: 5:19-cv-00024-FDW**

Aberle v. Howell et al
Assigned to: Chief Judge Frank D. Whitney
Cause: Prisoner Civil Rights

Date Filed: 03/07/2019
Jury Demand: Plaintiff
Nature of Suit: 550 Prisoner: Civil Rights
Jurisdiction: Federal Question

Plaintiff

Brian Troy Aberle

represented by **Brian Troy Aberle**
Ashe County Detention Center
140 Government Circle
Jefferson, NC 28640
PRO SE

V.

Defendant

B. Phil Howell
Sheriff, Ashe County

Defendant

Sharon Price
Former Captain, Ashe County Sheriff's Office

Defendant

Jon Stout
Detective, Ashe County Sheriff's Office

Defendant

Timothy Moretz
Ashe County Probation Officer

Defendant

Sherman M. Lee
Ashe County Magistrate Judge

Date Filed	#	Docket Text
03/07/2019	<u>1</u>	COMPLAINT against B. Phil Howell, Sherman M. Lee, Timothy Moretz, Sharon Price, Jon Stout with Jury Demand, filed by Brian Troy Aberle. (Attachments: # <u>1</u> Exhibits and Grievances, # <u>2</u> Envelope) (tmg) (Entered: 03/07/2019)
03/07/2019	<u>2</u>	AFFIDAVIT - 1983 Application IFP (<i>Sealed - Participants</i>) by Brian Troy Aberle (Attachments: # <u>1</u> Envelope) (tmg) (Entered: 03/07/2019)

OKS
08248
pg 1 of 10

Kitchen

(all items removed from residence
by SBI, taped on tarps)

- glass baking dish w/ several glass smoking devices, empty glass vials and various pieces of trash
- lab grade hot stir plate
- 5lb plastic bottle of Sodium hydroxide. Empty "mollys products"
- plastic bottle c. ^{ces} ~~Formic~~ ^{ces} Formic acid, 100g, 3/4 full "Hi-media"
- plastic container c. white beads, labeled calcium chloride
- 1L bottle "LabChem" Sulfuric acid. Full.
- metal funnel c. 3 rubber bulbs
- (2) - 6oz L-ascorbic acid "resurrection beauty". Empty
- 1 gallon "Torco Race Fuels" Methanol. 3/4 full
- 2 1.75oz bottles of "Loctite" clean up solvent (no info)
- unopened 500g "Hi-media" calcium hydroxide
- 2lb c. glass vial, bag + vial labeled palladium chloride 8g.
- amber glass vial c. off white powder
- 2 glass bottles c. white round pellets, both hand labeled Ammon. Nitrate.
- glass bottle c. clear round pellets ^{hand} labeled "urea."
- metal cooking pot c. bottle labeled organic food grade 35% ~~hydrox~~ hydrogen peroxide, full, taped, possibly unopened

CLS
6-22-18
pg 2 of 10

- 1 gal. TransChem Muriatic acid. ^{hand} 1/2 full
- pH = acidic
- 2.5 lb bottle of "Animated" Ammon. Chloride. full
- 2 lb bottle of "Potassium hydroxide flakes". full
- dropper bottle ^{hand} labeled "Safrole" c. pink liquid (5)
- amber dropper labeled ^{hand} "~~acetyl~~aldehyde" c. ^{acetylaldehyde} clear liquid. full
- amber bottle c. ^{yellow} clear liquid ^{hand} labeled "kerosene" Smells like Hoppes gun cleaner (top labeled hoppes)
- amber bottle labeled "organic food grade hydrogen peroxide". full (small)
- 5 oz bottle labeled Citric acid. full
- 16 oz. MCT oil, full
- ChemSavers 500g p-benzoquinone. full, never opened
- 1 kg p-formaldehyde (granular). full "Electron microscopics"
- unopened mercury(II) oxide (small) full
- heat sealed food saver bag c. herbs of some kind ^{spice}
- "Kitchenliving" electric hot plate
- 21pb c.
 - 21pb c. calibration 10g wt
 - 21pb c. 21pb w/ white crystalline materials each ^{hand} labeled "citric acid"
 - 21pb c. white pills ^{hand} labeled "L-lysine"
 - 21pb c. white powder ^{hand} labeled calcium hydroxide edible lime.
 - 21pb c. Several brown flat pellets

CLB
6-22-10
pg 3 of 10

- 21 pb c. seeds (not consistent w/ CS)
↳ or brown plant material
- 21 pb c. white powder ^{hand} labeled Calcium hydroxide
28g
- large pb labeled 'Peganum harmala' c. brown
plant material 5 kilo
- 10 kilo ↑ same almost empty.
- 21 pb c. filter papers (coffee)
- empty mason jar hand labeled 'egg'
- 2 empty glass jars w/ brown residue
- 3 1 gallon glass jars each c. clear liquid
- all aqueous
- plastic bottle 16oz DMSO full
- open (no lid) 2.5 lb 'Davids Kosher Salt' 1/2 full
- unopened 1L 'Chem Savers' N,N-dimethylformide
- 7 glass jars each c. dark liquid. One is
hand labeled 'Syrian Rue'
↳ neutral
- 1 glass jar c. cloudy liquid (neutral)
- 32oz bottle 88% Lactic Acid, full flammable
- 2 glass jars each c. yellow liquid. (both neutral)
- 1 glass jar c. bilayered liquid (2)
(2B) - bottom (dark) - aqueous
(2A) - top (clear) - solvent } neutral
flammable
- glass jar c. light yellow liquid - neutral - hand
- glass jar c. dark liquid. hand labeled (3) labeled 'N'
↳ neutral
↳ solvent
"Keros"

- glass jar c. bilayered liquid **(3)** hand labeled "kero"
 - (3A)** → top (clear) - solvent / neutral
 - (3B)** → bottom (dark) - aqueous / neutral
- 2 glass jars c. peach colored liquid, both hand labeled "post Deisel Freeze"
 - ↳ neutral
 - ↳ solvent
- glass jar c. peach colored liquid, hand labeled "N?". neutral / solvent
- empty glass jar labeled "NaP" c. dark residue
- glass jar c. peach colored liquid hand labeled "gas", neutral / solvent
- glass jar c. bilayered liquid
 - top (clear) - neutral / solvent
 - bottom (dark) - neutral / aqueous
- glass jar c. bilayered liquid
 - top (blue / clear) - neutral / solvent
 - bottom (black) - neutral / aqueous
- plastic bottle c. brown "gunk" material labeled "yellow fuel treatment"
- liquid fire, 1 qt. 1/5 full.
- glass bottle c. clear liquid (bilayered) **4**
 - top (clear) - solvent / neutral **(4A)**
 - bottom (clear) - aqueous / BASIC **(4B)**

↳ glass pipet sticking of lid, corked & taped.
consistent w/ homemade vessel.

CLS
6-22-18
pg 5 of 10

- 21pb c. white powder hand labeled "MSM"
- 11b ~~21pb~~ c. 'Cellar Science' tartaric acid (white crystalline material)
- Amber bottle w/ liquid residue
- Small amber bottle w/ liquid
- Amber bottle, empty, hand labeled "Synanthro H₂O"
- 5 lbs Citric Acid, unopened
- 7 21pb's c. frozen liquid material. (yellow, dark et brown)
- 3 plastic bottles c. frozen liquid material.
" ^{CLS} ~~attag~~ said to be urine"
- 21pb (large) 1/2 full c. ground plant like mat
- foil 21pb labeled "Myrrh" resin 11b
- 21pb c.
 - foil packet "eurycoma" longifolia "jack 25g (unopened)
- 21pb c. tan powder hand labeled "Tongkat Ali, 100:1"
- 3 21pb's each c. clear empty capsules
- 21pb labeled ^{hand} "Rue extracts"
- 21pb c. 4 ml c. liquid hand labeled "aconitine extract"
- 21pb hand labeled "water extract"
- 9 capsules, c. brown material
- 21pb c. foil packet labeled "Harmala"
- 2 bags c. tan powder

CMS

UZZ-18

pg 6 of 10

- 2 electric hot plates
- 1 gal bottle $\frac{1}{2}$ full clear liquid
- 1 gal bottle of "Clorox"
- 21pb hand labeled "Piss dope" c. 5 capsules each
- brown/black material
- 2 hot plates
- 21pb c. empty clear capsules
- Several empty 21pb's
- plastic tubing (several feet)
- Cut open camp fuel container, empty
- 1 gal bottle almost empty hand labeled diesel fuel. yellow liquid (Vinegar)
- 1 gal. Clear Strip "VM & P Naptha" $\frac{1}{2}$ full
- 16 oz DMSO (dimethyl sulfoxide) $\frac{1}{2}$ full
- large turkey baster
- blue plastic piping
- several glass pipes w/ dark residue
- pH meter
- glass reflux / titration funnel^{tube} (2)
- plastic measuring cup
- round separating glassware
- hot plate
- glassware stand c. round bottom flask
- glass distillation tube (filtration?) (2)
- copper tubing
- glass stand
- "Syran Rue" labeled empty glass jar

- glass bottom for a fuel lantern, full yellow liquid

CRS
4-22-18
p. 7 of 10

- glass jar c. brown residue
- glass tube w/ wood cut on end

Living Room

- Zl pb c. Charcoal like material, hand labeled "12^g"
- Zl pb ".4g pure DMT" (hand labeled ~~(1)~~ CRS 7-10-18)
 - Zl pb (hand labeled "300^g") c. brown material
 - ← Item # 1 CRS 7-10-18
- Zl pb labeled "Anadenanthera peregrina" 1 kilo (yopo seeds) 3/4 full
- digital scale
- Zl pb c. dirty glass
- Zl pb hand labeled "Frankinsense" (off white hard material)
- (2) - Zl pb hand labeled "one time Rue" c. brown material
- (3) - Zl pb hand labeled "Syrian Rue Seed Skin" c. fine brown material
- 2 Springs
- 3 Zl pbs not labeled c. brown material
- 1 Zl pb c. Several empty clear capsules
- Zl pb c. pink crystalline material (rock like)
- Zl pb c. tan rock like material
- Zl pb c. orange powder
- large Zl pb c. brown powder

CBS

6-22-18

pg 8 of 10

- 3 plastic containers labeled "Kabukina Rape"
- 25g - all c. brown powder
- large metal cooking pot c. black granular material
- Ziploc labeled "galanual root" → plant like material
- box "Calden" c. several syringes
- empty Coleman fuel (1gal)
- empty "Klean Strip Xylene" 1gal
- empty Crown Paint thinner 1gal (mineral oils)
- empty Jaxo VM & P naphtha 1qt
- several feet plastic tubing

- glass jar c. dark yellow liquid (b. layered)
 - top (clear)
 - bottom (dark yellow)
- 1gal glass jar full clear liquid
- glass jar hand labeled "Kero Diesel 1Gal" empty w/ brown residue
- glass jar - ^{labeled} diesel 1/2 full peach colored
- glass jar "Syrian Rue", 1/4 full dark liquid
- 2 unlabeled liquor bottles, full / 1/2 full, clear liquids
- homemade burner
 - pulp inside glass jar
 - burnt material on tray on top

all
needed

CRS
6-22-18

- large glass separating funnel c. clear liquid. Attached to glass wire stand

Outside front porch.

- 2 1gal glass jars c. dark liquid. both $\frac{1}{2}$ full. one hand labeled "gas"
- plastic bottle c. off white sludge material
- 2 plastic funnels
- large paint bucket w/ plastic lid & pour spout c. dark liquid. (2)
 - pH basic
- 2 large storage containers, several gallons, each full of dark, blue tinted liquid
- 4 large plastic storage containers c. several (100,ish) glass jars, empty
- 4 paint buckets c. clear, cloudy, yellow liquid.
- 3 1gal glass jars full liquid
 - 2 clear
 - 1 dark

Items seized

CRS

4-22-18

pg 10 of 10

① finished product

~~plastic bag hand labeled "DMT"~~ CRS 7-10-18

plastic bag hand labeled "300 g" c. brown material

② Bi-layered liquid

top - 140ml

bottom - 200ml

} sampled from each

③ Bi-layered liquid

top - 500ml

bottom - 250ml

} sampled from both

④ Bi-layered liquid

top - 50ml → sampled

bottom - took all

⑤ medicine dropper bottle c. liquid
hand labeled "saffrole".

Neurodegenerative Disease Cure 2018 - Attachment "A"

Published at ResearchGate.NET Author: Brian Aberle

Cases of Alzheimer's disease are expected to triple by 2050[0]. Neurodegenerative diseases are increasing around the world. [1] The most common degenerative nerve diseases are: [Alzheimer disease, Multiple Sclerosis, Parkinson disease, Lewy Body Dementia, Frontotemporal Dementia, Amyotrophic Lateral Sclerosis(ALS), Huntington Chorea, and Prion Diseases]. Neurofibrillary tangles and many kinds of striatal amyloid plaques are identifiers Alzheimer's and Parkinson's and Dementia. This nerve damage causes loss of motor control and loss of memory.

A mild case of neurodegeneration has been presumed to be normal aging – The term "Senior Moment" is in the dictionary. Cognitive aging may actually be an earlier stage of Parkinson's or another neurodegenerative disease as opposed to a normal aspect of aging like grey hair.[3] Dementia affects 1 in 20 people over the age of 65. The age-specific incidence of dementia in the UK increases from 7/1000 per year at age 65 to 85/1000 per year at age 85.[6] In a US study, about 2.5% of subjects aged 65 to 74 years had a clinical diagnosis of senile dementia compared to 4% of those aged 75 to 79, 11% of those aged 80 to 84 and 24% of those aged 85 to 93.[7] Additionally, many more people suffer from mild cognitive impairment that does not progress to dementia.

In the late 1990's it first became accepted knowledge that humans have the ability to create new neurons. I was previously thought that we were born with all the neurons we will ever have and that we can only lose them, however we now know of the process called neurogenesis.[9][10] It is now known that medicines causing the inhibition of the acetylcholinesterase (AChE) enzyme improve cognitive abilities for neurodegenerative diseases. AChE inhibitors currently serve as front line medication for Parkinsons and Alzheimers. They also have been found to improve behavioral and psychological symptoms of dementia. [2]

To aid in the understanding cholinergic principles, consider Datura Stramonium from the nightshade family which is an anticholinergic agent, a substance that blocks the neurotransmitter acetylcholine. Classified as a deliriant, it causes bizarre behavior and pronounced amnesia. The effects from Datura poisoning generally last from 24-48 hours and in some cases, it can last 2 weeks. [13] The common-knowledge antidote is a reversible cholinesterase inhibitor, Physostigmine, interestingly - acquired from the poisonous Manchineel tree. [14]

There are multiple reversible AChE inhibitors that have varying methods of action based on their classification of competitive, noncompetitive, or a degree of mixed inhibition that determines the duration and bonding affinity between the inhibitor and the acetylcholinesterase enzyme. As of 2018, three acetylcholinesterase (AChE) inhibitors donepezil, galantamine and rivastigmine are recommended as options for managing Alzheimer's disease. Guidance note 1.4 says "If prescribing an AChE inhibitor (donepezil, galantamine or rivastigmine), treatment should normally be started with the drug with the lowest acquisition cost" [12]

Deoxypeganine is an Alkaloid from Syrian Rue (Peganum Harmala), a plant used extensively in traditional medicine in lands with an Islamic heritage for CNS and other ailments. This compound is shown to have acetylcholinesterase inhibitory activity twice that of Galantamine." [15] This knowledge is not being utilized by mainstream medicine. Additionally, it has been proven that harmaine, harmine, and harmaline, the main active constituent in Syrian Rue, had good selective inhibitory activities against acetylcholinesterase. [17] 80 extracts were screened for AChE inhibitory activity by a TLC bioautography method. The inhibiting effect of the 32 most active extracts was measured by a microplate colorimetric assay. Due to the best activity, the seeds of Peganum harmala L. were investigated in detail. [11]

In 2017 mankind first discovered 10 additional alkaloids in *Peganum harmala*. Their alkaloids structures, including stereochemistry, were elucidated through spectroscopic analyses, quantum chemistry calculations, and single-crystal X-ray diffraction. [18] In the Tihkal under the harmaline entry it mentions that the effects of pure harmaline by itself, differ from the effects of *Peganum harmala* whole seeds. Shulgan wrote, "They are very different from one-another." Other researchers concur with Shulgans findings.

It has also been noted by experiential researchers that the inhaled effects from Syrian Rue smoke differ from oral digestion. It is possible that heat decarboxylates part of the medicine as is the case with tetrahydrocannabinol. [19] Interestingly, it has also been shown that the main active ingredient in cannabis, tetrahydrocannabinol (abbreviated THC), is also a competitive inhibitor of acetylcholinesterase.[16] Furthermore, In Islam, according to the Shi'a hadith, Muhammad was commanded by God to have his people ingest Syrian Rue for bravery. This Hadith is interesting in the present connection because it is followed by the recommendation not that it be ingested, but that it be burned as incense instead. In an older text, another hadith indicates that Syrian Rue was consumed orally in a drink made with milk. [20] Because it is known that Syrian Rue contains a minimum of 4 different alkaloids which act as acetylcholinesterase inhibitors, and it is known that there are subtle differences in each inhibitors selectivity and duration, it would reason that the seeds as a whole are a more effective medicine than any alkaloid that is singled out from them. Leonardo da Vinci wrote that Syrian Rue is "miracle smart nutrient" and he was neither Islamic nor aware of neurofibrillary tangles and amyloid plaques. Syrian Rue apparently flosses your neurons and brushes your brain.

Syrian Rue is not the only natural plant medicine. Marijuana[16] is scientifically known to be in the same medicinal category as donepezil, galantamine and rivastigmine which are the leading prescriptions for the leading problem plaguing humanity as we enter 2018. Sacred Plant medicines will be recognized as we exit 2018. Levels of neurotoxic b-amyloid peptides are significantly decreased in postmortem examinations of Alzheimer's victims.[4] Nicotine produces clarity and cognitive improvement when the Nicotinic acetylcholine receptors(nAChRs) are activated.[5] The tobacco plant has greater medicinal activity when used as a snuff for insufflation.

Coffee, tea, and caffeine consumption have been found to have preventive effects on cognitive decline and dementia. Beyond the short-term enhancing effects, some studies examined the long-term effects and showed that coffee, tea, and caffeine consumption could contribute to protect against late-life cognitive decline and dementia.[8] It was discovered that there is a neuron layer routing electrical neuroblasts in stimulated neurons near neurogenesis.[21] Electrical activity also stimulates the making of small fibers that assist the migration of newborn neurons [22] Exciting the neurotransmitters serotonin, acetylcholine, dopamine, and glutamate have been identified as factors in stimulating neurogenesis.[23] We have known for a while that exercise produces serotonin and dopamine.[24] We know now that introducing those neurotransmitters also promotes neurogenesis. Increased neurogenesis has been observed by both enriched environment stimuli and exercise. [25]

Antidepressant Treatment Increases Hippocampal Neurogenesis [26]. Others have confirmed the induction of neurogenesis by antidepressant drugs.[27] [28] Antidepressants that enhance serotonergic signaling stimulate hippocampal neurogenesis by a mechanism that may involve upregulation of BDNF. These drugs raise serotonin and dopamine levels. Interestingly, the strongest type of Antidepressant is inhibition of monoamine oxidase, an MAOI. Due to the dangers of synthesized pharmaceutical

irreversible MAOI's they are only prescribed as a last resort. Therefore, Syrian Rue is a multi-faceted medicine for promoting neurogenesis because it also functions as a very potent reversible MAOI medicine.

One study finally looks beyond the acetylcholinesterase inhibition aspect to study the whole-medicine cerebroprotective effect of the isolated total alkaloid extract of *Peganum harmala* by its antioxidant characteristic in ethanol influenced oxidation by increasing the GSH and decreasing the TBARS level in whole brain, which delays the neurodegenerative process. The cerebroprotective effect was further adorned by its MAO-A inhibitory action, by which it influences the effects of epinephrine and other monoamines. It prevented the DNA fragmentation of frontotemporal cortex of the brain by decreasing in the internucleosomal DNA fragmentation and lowering the laddering pattern. Hence, all these preventive measure of harmal alkaloids of seeds of *Peganum harmala* are potential enough in the management of Neurodegenerative disorders of the type Alzheimer's diseases. [29]

If binding more serotonin at receptor sites promotes neurogenesis it is likely that plant sources of natural analogs of Dimethyltryptamine (DMT), which are psychedelic tryptamines or serotonergic psychedelics, such as 4-AcO-DMT, 5-MeO-DMT, 5-HO-DMT, psilocybin (4-PO-DMT), and psilocin (4-HO-DMT) binding to the same receptor sites as serotonin, may also promote neurogenesis.

Finally, sex hormones (estrogen and testosterone) may directly and/or indirectly affect neurogenesis in the aging brain. For example, estrogen levels decline abruptly in post-menopausal women not receiving hormone replacement therapy. Estrogen deprivation significantly reduces hippocampal BDNF levels in the female rat hippocampus; Estrogen alone promotes proliferation of both embryonic and adult neural stem cells (Brannvall, 2002). Similarly, men experience an age-related decline in testosterone levels. Testosterone promotes neurogenesis in the adult songbird neostriatum (Louissaint *et al.*, 2002)

[0] <https://www.alzinfo.org/>

[1] <https://medicine.yale.edu/neurology/patients/neurodegenerative/>

[2] <https://academic.oup.com/ageing/article/35/4/336/22357>

[3] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3979029/>

[4] <https://www.ncbi.nlm.nih.gov/pubmed/12065674>

[5] Brain effects of Nicotine and derived compounds, ISSN: 1664-8714, ISBN: 978-2-88919-141-3, DOI 10.3389/fphar.2012.00116 <https://books.google.com/books?id=YJQLh8c4NQ0C&pg=PA1>

[6] <https://books.google.com/books?id=7XGwAAAAQBAJ&pg=PT446>

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L. Krenn, Dept of Pharmacognosy, University of Vienna, Althanstrasse 14, A-1090 Vienna, Austria.
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Acetylcholinesterase and Butyrylcholinesterase Inhibitory Activities of β -Carboline and Quinoline
Alkaloids Derivatives from the Plants of Genus Peganum
Volume 2013 (2013), Article ID 717232, 6 pages
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DOI: 10.1021/acs.jnatprod.6b01146 Pub Date: January 27, 2017
The American Chemical Society and American Society of Pharmacognosy
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Smoke - Syrian Rue
Investigation of the alkaloids from *Peganum harmala* seeds yielded two pairs of unique racemic pyrroloindole alkaloids, (±)-peganines A-B (1-2); two rare thiazole derivatives, peganumals A-B (3-4); six new β-carboline alkaloids, pegaharmines F-K (5-10); and 12 known analogues. Their structures, including stereochemistry, were elucidated through spectroscopic analyses, quantum chemistry calculations, and single-crystal X-ray diffraction.

J. Nat. Prod., 2017, 80 (2), pp 551-559

DOI: 10.1021/acs.jnatprod.6b01146 Pub Date: January 27, 2017

The American Chemical Society and American Society of Pharmacognosy

Pure harmaline is only part of the medicine. Vasicine is an expectorant and antitussive (cough medicine) and bronchodilator **treating bronchitis and asthma** by dilating the airways and improves overall lung functions. That makes the remaining alkaloids more easily inhaled.

Syrian Rue smoke is used for the treatment of catarrhal diseases in the sinus cavity. Experiments prove that the smoke stops bacteria reproduction. It is bacteriostatic for the bacterial strains responsible for typhoid fever, dysentery, and other diseases.

P. K. Alimbaeva and A. V. Goncharova, Wild-Growing Medicinal Plants of Kirgisia, Frunze (1971), p. 88; I. Isamukhamedov and N. Sharakhimov, in: The Pharmacology of Alkaloids and Their Derivatives, Tashkent (1972), p. 187.

Smoke from the seeds has been shown to kill algae, bacteria, parasites and molds. The smoke was studied using gas chromatography and mass spectroscopy analysis.

Degruyter Volume 60, Issue 9-10 (Oct 2005)

Ahmad R. Shahverdi, Hamid R. Monsef-Esfahani, Bahman Nickavar, Lila Bitarafan, Samira Khodaei, and Narges Khoshakhlagh

Peganum harmala L. smoke has been used traditionally in Middle Eastern and Asian countries as a disinfectant and air purifier. Here, the smoke was collected by a simple, reproducible method, and its chemical constituents of the smoke and volatile oil were analyzed. The major components of *P. harmala* smoke were α-pinene (60.4 %), limonene (6.4 %) and styrene (4.2 %) and those of the volatile oil were α-pinene (72.6 %), trans-verbenole (3.9 %) and sabinene (2.6 %). Styrene and some other components with potential **antimicrobial and immunomodulatory activities were found in the smoke but not found in the volatile oil.**

Journal of Essential Oil Bearing Plants

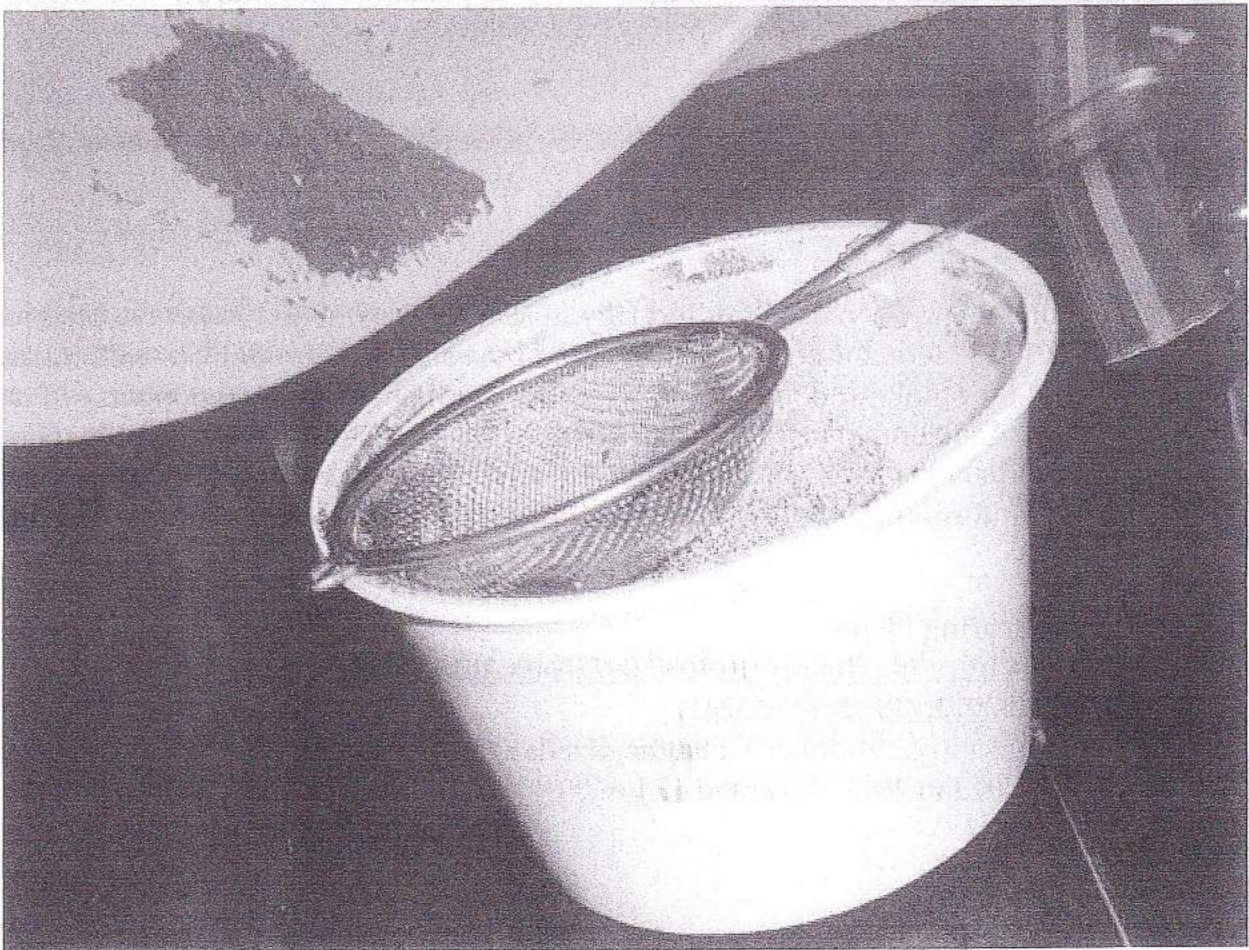
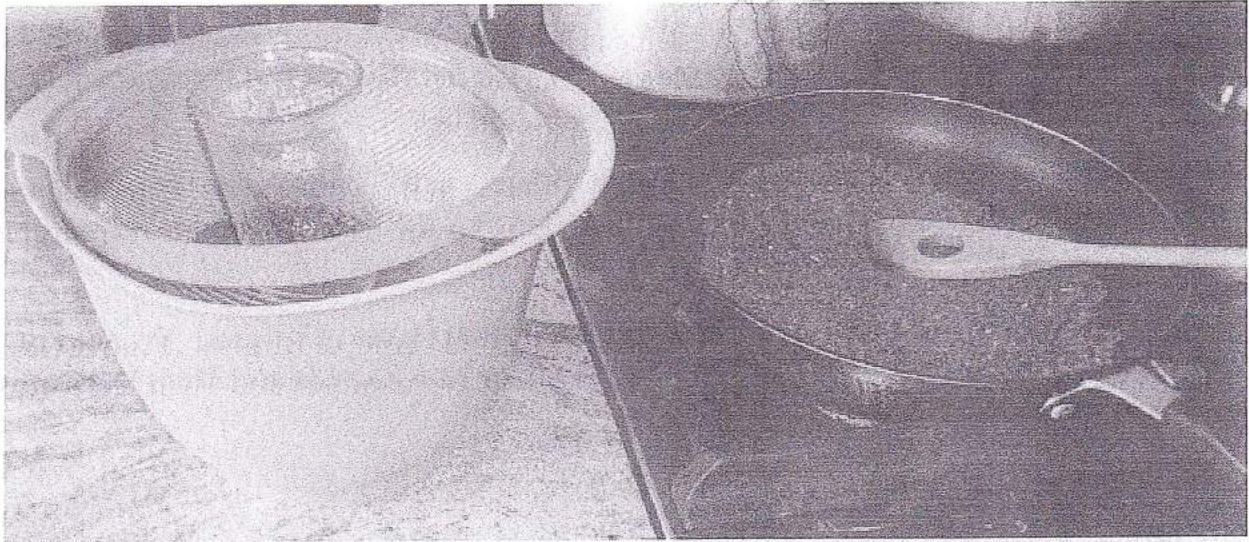
Volume 16, 2013 – Issue 4 <http://dx.doi.org/10.1080/0972060X.2013.813241>

(<http://dx.doi.org/10.1080/0972060X.2013.813241>)

Pouya Faridi, Younes Ghasemi & Abdolali Mohagheghzadeh

Pages 469-473 | Received 01 Jan 2012, Accepted 17 Jun 2012

If you wish to prepare the seeds to smoke (or to get the most out of them) – grind the seeds against a metal screen to collect the brown powder that falls off. Sift the powder through a fine steel mesh kitchen colander to filter out chunks, stems, and other impurities. Lightly toasting the seeds before grinding them significantly simplifies the process. Toasting essentially dries the seeds. The outermost layer of the seed comes off the dried/toasted seeds with little effort. I have found that using a small glass jar to grind the seeds against the screen colander will shave off the outer skin. The smokable powder is caught under the screen. If you don't smoke, you can put that powder into gelcaps to consume it without tasting it. After the seeds have had most of the skin scraped off, the seed with some skin remaining is perfect for a water (or alcohol) extract, which will almost thoroughly devoid the seed of all remaining harmala (without needlessly crushing the pit of the seed).



P. harmala has appreciable efficacy in destroying **intracellular parasites** in the vesicular forms. Because of its appreciable efficacy in destroying intracellular parasites as well as non-hepatotoxic and non-nephrotoxic nature, harmine, in the vesicular forms, may be considered for clinical application in humans.

Journal of Drug Targeting,
2004 Apr;12(3):165-75.

Lala S, Pramanick S, Mukhopadhyay S, Bandyopadhyay S, Basu M

In this study, we investigated the protective effects of *Peganum harmala* seeds extract (CPH) against chronic ethanol treatment. Hepatotoxicity was induced in male Wistar rats by administering ethanol 35% (4g/kg/day) for 6 weeks. CPH was co-administered with ethanol, by intraperitoneal (IP) injection, at a dose of 10mg/kg bw/day. Control rats were injected by saline solution (NaCl 9%). **Chronic ethanol administration** intensified lipid peroxidation monitored by an increase of TBARS level in liver. Ethanol treatment caused also a drastic alteration in antioxidant defence system; hepatic superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPx) activities. A co-administration of CPH during ethanol treatment **inhibited lipid peroxidation** and improved antioxidants activities. However, treatment with *P. harmala* extract **protects efficiently** the hepatic function of alcoholic rats by the considerable decrease of aminotransferase contents in serum of ethanol-treated rats.

Archives of Physiology and Biochemistry – The Journal of Metabolic Diseases
Volume 121, Issue 2 Published online: 14 May 2015

Ezzeddine Bourogaa, Raoudha Mezghani Jarraya, Mohamed Damak & Abdelfattah Elfeki

<http://dx.doi.org/10.3109/13813455.2015.1016974> (<http://dx.doi.org/10.3109/13813455.2015.1016974>)

Mice? It was 1999 then – from mice to men that is evolution in the end.

Peganum harmala seed extracts also show effectiveness against various tumor cell lines, both in vitro and in vivo. Results obtained indicate that alkaloids of *Peganum* have a high cell toxicity in vitro. The active principle at a dose of 50 mg/kg given orally to mice for 40 days was found to have significant antitumoural activity. *Peganum harmala* alkaloids thus possess significant antitumour potential, which could prove useful as a novel **anticancer therapy**.

1999 Nov-Dec;54(6):753-8.

Lamchouri F, Settaf A, Cherrah Y

Plant derived agents may exert a new approach to the treatment of **leukaemia**. The present study was an evaluation of proliferation, cytotoxicity and differentiation of harmine and harmaline on HL60 cells, alone or in combination with ATRA and G-CSF. Counting of cells, viability, MTT assay, morphology, NBT reduction and flow cytometry analysis were performed using CD11b and CD 14 monoclonal antibodies. The data showed that harmine and harmaline reduced proliferation in dose and time dependent manner. This shows that the direction of differentiation is dominantly determined by ATRA. These **preliminary** data implies a new approach in treatment of leukemia.

Archives of Pharmacal Research July 2007, Volume 30, Issue 7, pp 844
Farhad Zaker, Arezo Oody, Alireza Arjmand

<https://syrianrue.org/research/>

Twelve indole alkaloids, including two novels, were purified and identified from *P. harmala*. The chemical structures were determined by spectroscopic and chemical methods. The cytotoxicities against five human leukemia cell lines were assayed for the alkaloids. Some alkaloids showed potent cytotoxicity against human leukemia cells. Harmalacidine (HMC) showed the highest cytotoxicity against U-937, which could induce cell apoptosis. The results suggest that the alkaloids have perfect selectivity for human leukemia cells.

Toxins (Basel). 2017 May; 9(5): 150.

Published online 2017 Apr 28. doi: 10.3390/toxins9050150

Yuan Li, Yunli Zhao, Xia Zhou, Wei Ni, Zhi Dai, Dong Yang, Junjun Hao, Lin Luo, Yaping Liu, Xiaodong Luo, and Xudong Zhao

The beta-carboline alkaloids present in medicinal plants, such as *Peganum harmala* and *Eurycoma longifolia*, have recently drawn attention due to their antitumor activities. Further mechanistic studies indicate that beta-carboline derivatives inhibit DNA topoisomerases and interfere with DNA synthesis. Moreover, some beta-carboline compounds are specific **inhibitors of cyclin dependent kinases (CDKs)**. In this study we used budding yeast as a model system to investigate the antitumor mechanism of beta-carboline drugs. We found that DH334, a beta-carboline derivative, inhibits the growth of budding yeast.

Cancer and Biological Therapy, 2007 Aug;6(8):1193-9. Epub 2007 May 4. Li Y, Liang F, Jiang W, Yu F, Cao R, Ma Q, Dai X, Jiang J, Wang Y, Si S.

We report the *in vivo* antioxidative properties of the aromatic (harmine, harmine, harmol) and dihydro-beta-carbolines (harmaline and harmalol) studied by using *Saccharomyces cerevisiae* strains proficient and deficient in antioxidant defenses. Their antimutagenic activity was also assayed in *S. cerevisiae* and the antigenotoxicity was tested by the comet assay in V79 cell line, when both eukaryotic systems were exposed to H₂O₂. We show that the alkaloids have a significant protective effect against H₂O₂ and paraquat oxidative agents in yeast cells, and that their ability to scavenge hydroxyl radicals contributes to their **antimutagenic and antigenotoxic effects**.

Mutagenesis. 2007 Jul;22(4):293-302. Epub 2007 Jun 1.

Moura DJ, Richter MF, Boeira JM, Pêgas Henriques JA, Saffi J

Gamma-harmine exhibited relatively good **radioprotective** effect. Gamma-harmine is the first alkaloid isolated from a plant having protective effects against whole-body lethal irradiation in mice

Yao Xue Xue Bao. 1995;30(9):715-7..

A 2016 study investigated the **antimicrobial** activity of Harmal (*Peganum harmala*) aqueous extracts against two fungi (*Aspergillus niger* and *Penicillium italicum*) and two Gram negative bacteria (*Escherichia coli* and *Salmonella typhi*). The Harmal methanolic extracts were found to inhibit mycelial radial growth of both fungi. This effect was found to be significant at first day of the experiment as well as the last days. Mycelial fresh and dry weights of both fungi were also greatly reduced with *harmal* extracts. The higher

concentration of Harmal gave the maximum effect which decreased with dilution. The effect on mycelial growth was more pronounced on *P.italicum* than on *A.niger*. The effect of Harmal leaves extract on the two bacteria (*E.coli* and *S.typhi*) was evaluated by the inhibition zone and dilution methods. A clear zone of inhibition was shown by the extracts against both bacteria, although the inhibition was less against *E.coli*. The results of the dilution plate method showed that the log number of colonies of both bacteria was highly decreased with Harmal extract; however, *S.typhi* was more susceptible and greatly affected by the extract.

Journal of Microbiology Research, p-ISSN: 2166-5885 e-ISSN: 2166-5931, 2016
Abdel Moneim E. Sulieman, Ahmed A. Alghamdi, Vajid N. Veetil, Nasir A. Ibrahim

According to test results, *P. harmala* seeds extract showed **potent antioxidant** activity with IC₅₀ values ranging between 40-129 µg/ml. In case of antibacterial assay, *P. harmala* seeds showed better inhibitory activity than leaves against both strains i.e. *Staphylococcus aureus* and *Pseudomonas aeruginosa* with values ranging between 70 to 100% while in case of **antifungal** assay water-acetone extract of seeds showed significant antifungal effect against *Aspergillus niger*. In terms of cytotoxic assay, hexane extract of seeds of were more cytotoxic against shrimp larvae (LD₅₀ = 57.07 µg/ml). Aqueous extract of leaves of and acetone extract of seeds showed < 80% mortality in antileishmanial assay. GC-MS analysis revealed that leaves and seeds contain some important biological metabolites. It is concluded that selected plants could be a potential source of antileishmanial, antibacterial, antifungal and anticancer lead compound. Hence it is indicated to further investigate this plant in vitro as well as in vivo for new drug discovery.

International Journal of Biosciences, 9(1), 45-58, July 2016.

DOI: <http://dx.doi.org/10.12692/ijb/9.1.45-58>

(<http://dx.doi.org/10.12692/ijb/9.1.45-58>) Zainab Gul Kanwal, Abdul Hafeez, Ihsan Ul Haq, Tofeeq-Ur-Rehman, Syed Aun Muhammad, Irum Shazadi, Nighat Fatima, Nisar Ur Rehman

Introduction: Benign prostatic hyperplasia (BPH) is considered as a major cause of lower urinary tract symptoms (LUTS) in older men and its most common sign is nocturia. **Objectives:** This study aimed to determine the effect of the seeds of *Peganum harmala* compared with tamsulosin on alleviating urinary symptoms in patients with BPH. **Patients and Methods:** In this single blind clinical trial study, 90 patients diagnosed with BPH and LUTS, based on international prostate standard survey (IPSS) were divided into three groups. The first group was received oral capsule of *P. harmala*, the second group was administered tamsulosin with oral *P. harmala* seed and the third group was received tamsulosin drug and they were evaluated after 4 weeks. **Results:** The results showed that the difference between mean scores of IPSS was significant after the intervention ($P=0.001$). Besides, the mean of IPSS in the three groups was significantly different ($P=0.001$) (the first group 41.9 ± 5.3 , the second group 21.0 ± 4.4 , the third group 16.5 ± 3.7 respectively). However, after the intervention, patients in the second group had the lowest average on most indicators of IPSS but the difference was only significant about urinary frequency, nocturia and intermittency ($P<0.05$). **Conclusion:** Application of *Peganum harmala* seed can be useful in reducing urinary symptoms in patients with BPH.

Journal of Renal Injury Prevention 2017 ;6(2):127-131. PMID: 28497089

(<http://www.ncbi.nlm.nih.gov/pubmed/28497089>) Majid Shirani-Boroujeni, Saeed Heidari-Soureshjani, Zahra Keivani Hafshejani

Syrian Rue exhibits antisecretory and cytoprotective properties and is successfully treating gastric ulcers.

Phytomedicine Volume 20, Issue 13, 15 October 2013, Pages 1180-1185

Biochem Biophys Res Commun. 2011 Jun 3; 409(2):260-5

Two different studies showed bone anabolic effects of harmine. These findings suggest that harmine, as the main alkaloid of *P. harmala*, may be useful for treatment of some bone diseases. Harmine promotes osteoblast differentiation through bone morphogenetic protein signaling.

Yonezawa T, Lee JW, Hibino A, Asai M, Hojo H, Cha BY, Teruya T, Nagai K, Chung UI, Yagasaki K, Woo JT

European Journal of Pharmacology 2011 Jan 15; 650(2-3):511-8.

Using X-ray crystallographic analysis, Ten new alkaloids (peganumine B-I and two enantiomers), containing five β -carbolines, three quinazolones were isolated from the ethanol extract of *Peganum harmala* seeds testing their measured potential cytotoxicity and cholinesterase inhibitory activities.

DOI: [10.1039/C6RA00086J](https://doi.org/10.1039/C6RA00086J) (<https://doi.org/10.1039/C6RA00086J>) (Paper) *RSC Adv.*

(<https://doi.org/10.1039/2046-2069/2011>), 2016, 6, 15976-15987

Ya-di Yang, Xue-mei Cheng, Wei Liu, Zhu-zhen Han, Gui-xin Chou, Ying Wang, Du-xin Sun, Zheng-tao Wang and Chang-hong Wang

Rats? Diabetic humans has been done already....

In 2016, a study indicated that hydroalcoholic extract of *Peganum harmala* seeds possesses antidiabetic and hypolipidemic activities in streptozotocin-induced diabetic male rats.

Cholesterol, Volume 2016 (2016), Article ID 7389864, 6 pages

Gholamreza Komeili, Mohammad Hashemi, and Mohsen Bameri-Niafar

Rats again... I have never heard of a human Parkinson's Disease study with Syrian Rue, I expect to see one in 2018 if not by the close of 2017.....

Another 2016 study finds *Peganum Harmala* L. Extract Reduces Oxidative Stress and Improves Symptoms in 6-Hydroxydopamine-Induced Parkinson's Disease in Rats.

Iran J Pharm Res. 2016 Winter;15(1):275-81. PMID:27610168 PMCID:PMC4986102

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4986102/>).

Rezaei M, Nasri S, Roughani M, Niknami Z, Ziai SA.

A 2016 study found that Syrian Rue fights dental plaque. An ethanolic extract of *P. harmala* can inhibit the growth of *S. mutans*. Despite the higher inhibitory effect of 0.2% chlorhexidine compared to 50 mg/mL of this extract, other studies indicate that higher concentrations of *P. harmala* extract can have

similar or greater inhibitory effect against microorganisms. However, high cell toxicity of this extract on cells limits the use of this plant as an antimicrobial agent (like mouthwash) in oral cavity. Even if limited to low concentrations, either lonely or in combined preparations, its application might be more useful for resistant bacteria compared to the routine available mouthwashes. Further antimicrobial and cytotoxicity studies on animals or human subjects are needed to obtain more accurate and applicable results.

Journal of dentistry (Shiraz), 2016 Sep; 17(3): 213–218. PMCID: PMC5006831
 Mohammad Motamedifar, Hengameh Khosropanah, and Shima Dabiri

The extract of *Peganum harmala* was used topically to treat certain **dermatoses** of inflammatory nature. Results were encouraging and proved the antibacterial, antifungal, antipruritic and probably antiprotozoal effects of the extract.

International Journal of Dermatology, May 1980, DOI:10.1111/j.1365-4362.1980.tb00305.x
 El-Saad El-Rifaie M

In very very extremely large doses, Syrian Rue is an **abortifacient** in humans.

In a study on cattle, the curative effect of *P. harmala* was better than that of diminazene aceturate and produced minimal side effects **proven safe for pregnant animals**. It was concluded that the total alkaloid of *P. harmala* showed a marked effect as a treatment for haemosporidian infections in cattle.

Trop Anim Health Prod. 1997 Nov;29(4 Suppl):72S-76S.
 Hu T, Fan B, Liang J, Zhao S, Dang P, Gao F, Dong M

(<http://www.sciencedirect.com/science/article/pii/S2210909915300953#!>)
 (<http://www.sciencedirect.com/science/article/pii/S2210909915300953#!>)

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