

**PREPARATION OF STABLE GOMUTRA
FORMULATION “GOMUTRA PLUS CAPSULE”
W.R.T CONVENTIONAL FORMS OF GOMUTRA**



Dr. Sandip Mali

AGM-Healthcare

R&D

Pitambari Products Pvt.Ltd



॥ शरीरमाद्यं खलु धर्मसाधनम् ॥

INDEX



1. Gomutra Introduction

- Ayurvedic Aspects - A Panacea for Mankind
- Modern Review

2. Pharmaceutical Dosage Form of Gomutra

- Gomutra (fresh)
- Gomutra Ark
- Gomutra Ghanavati

3. Gomutra powder-

- Process
- Stability

4. Comparison with other Pharmaceutical Dosage Form of Gomutra

5. Clinical review of Gomutra powder

6. Triphala –Review

7. Gomutra plus Triphala – Synergism

8. Standardization of Gomutra plus Capsule

Gomutra- An Ayurvedic Panacea



The science of natural alternative medicine, Ayurveda (*meaning: the 'knowledge of life'*) originated in India. Use of naturally-occurring materials for therapeutic as well as prophylactic purposes is characteristic to the practice of Ayurveda. Gomutra / Cow urine has been elaborately explained in Ayurveda and described in "Sushruta Samhita", "Ashtanga Sangraha" and other Ayurvedic texts as an effective medicinal substance/secretion of animal origin with innumerable therapeutic properties. Bhav-Prakash Nighantu describes gomutra as the best of all types of animal urine (including human) and enumerates its various therapeutic uses. Gomutra is called "**Sanjivani**" and "**Amrita**" in Ayurveda.

गोमुत्र (Reference from ayurvedic text)

गोमुत्र कटु तीक्ष्णोष्णं क्षारं तीक्तकषायकम् लघ्वाग्निदीपनं मेध्यं पित्तकृत्कफवातहृत
शूलगुल्मोदरानाहकण्ड्वक्षिमुखरोगजित् किलासगदवातामबस्तिरुक्कुष्ठनाशनम्
कासश्वासापहं शोथकामलापाण्डुरोगहृत
कण्डुकिलासगदशुलमुखाक्षिरोगान्गुल्मातिसारमरुदामयमुत्ररोधान्
कासं सकुष्ठजठरक्रिमि पाण्डुरोगान्गोमुत्रमेकमपि पीतमपाकरोति
सर्वेष्वपि च मुत्रेषु गोमुत्रं गुणतोऽधिकम् । अतोऽविशेषात्कथने मुत्रं गोमुत्रमुच्यते
प्लीहोदर श्वासकासशोथवर्चोग्रहापहम् शूलगुल्मरुजाऽऽनाह कामलापाण्डुरोगहृत
कषायं तिक्ततीक्ष्णं च पुरणात्कर्णशुलहृत
भावप्रकाशनिघण्टु, मुत्रवर्ग १/५

गोमुत्र (Reference from ayurvedic text)

गोमुत्रं कटु तीक्ष्णोष्णं सक्षारत्वान्न वातलम् ।

लघ्वाग्निदिपनं मेध्यं पित्तलं कफवातनुत् ॥

शूलगुल्मोदरानाहविरेकास्यापनदिषु ।

मुत्रप्रयोगसाध्येषु गव्यं मुत्रं प्रयोजयेत् ॥

सुश्रुतसंहिता सुत्रस्थान. ४५/२२०-२२१

गव्यं समधुरं किञ्चिद् दोषघ्नं क्रिमिकुष्ठनुत्

कण्डु शमयेत् पीतं सम्यग्दोषोदरे हितम्

सुश्रुतसंहिता सुत्रस्थान. १/१०१-१०६

Capsule

Gomutra

Spray dried Gomutra Powder

गोमुत्र (Reference from ayurvedic text)

तिक्ष्णान्युष्णानि कटुनि तिक्तानि लवणानुरसानि लघुनि शोधनानि
कफवातकृमिमेदोविष गुल्मारीउदरकुष्ठ शोफारोचकपाण्डुरोगहराणि हृदयानि
दीपनानि च सामान्यतः । - सुश्रुत संहिता - द्रवद्रव्यविधी - ४५/सुत्रस्थान

गव्यं समधुरं किचिद् दोषनं क्रिमिकुष्ठनुत ।

कटु शमयेत पीतं सम्यग्दोषोदरे हितम् ॥ - चरकसंहिता दीर्घजिवितंच । सुत्रस्थान

पित्तलं रुक्षतीष्णोष्णं लवणानुरसं कटु । कृमिशोफोदरानाहशुलपाण्डु कफानिलान् ।

गुल्मारुचिविषशिवत्रकुष्ठार्शांसि जयेत्लघुम् । - सार्थ वाग्भट

Bio-chemical Components & Their Properties



Prior research proves that it contains numerous Bio components those are responsible for Antioxidant , Bio-enhancer, anti microbial properties—

Sr. No.	Bio-Chemical content	Properties
1	Nitrogen, N ₂ ,NH ₂	Removes blood abnormalities and toxins, Natural stimulant of urinary track, activates kidneys and it is diuretic.
2	Phenols & halogenated phenols	Anti oxidant , Bio-enhancer, Immune booster
3	Sulphur, S	Supports motion in large intestines. Cleanses blood.
4	Ammonia, NH ₃ .	Stabilize bile, mucous and air of body. Stabilises blood formation
5	Copper, Cu	Controls built up of unwanted fats
6	Iron, Fe	Maintains balance and helps in production of red blood cells & haemoglobin. Stabilises working power.
7	Urea, CO(NH ₂) ₂	Regulate urine formation and removal. Germicidal.

Sr. No.	Bio-Chemical content	Properties
8	Uric Acid, C ₅ H ₄ N ₄ O ₃	Removes swelling or inflammation. It is diuretic therefore destroys toxins.
9	Phosphate, P	Helps in removing stones from urinary track.
10	Sodium, Na	Purifies blood. Antacid
11	Potassium, K	Cures hereditary rheumatism. Increases appetite. Removes muscular weakness and laziness.
12	Manganese, Mn	Germicidal, stops growth of germs.
13	Carbolic acid, HCOOH	Germicidal, stops growth of germs and decay due to gangrene
14	Calcium, Ca,	Blood purifier, bone strengthener, germicidal
15	Salt, NaCl	Decreases acidic contents of blood, germicidal
16	Vitamins A,B,C,D,E.	Vitamin B is active ingredient for energetic life and saves from nervousness and thirst, strengthens bones and reproductive ingredient for energetic life and saves from nervousness and thirst, strengthens bones and reproductive power

Sr. No.	Bio-Chemical content	Properties
17	Minerals	Minerals Increase immunity
18	Lactose, C ₆ H ₁₂ O ₆	strengths heart, removes thirst and nervousness.
19	Enzymes	Improves digestion & absorption , increase immunity
20	Water, (H ₂ O)	Maintains fluidity of blood, maintains body temperature
21	Hipuric acid, C ₉ H ₉ N ₃ O ₇	Removes toxins through urine
22	Creatinin, C ₄ H ₇ N ₃ O ₂	Germicide
23	Aurum Hydroxide, AuOH	It is germicidal and increases immunity power. AuOH is highly antibiotic and anti-toxic.

Chemical Analysis of Gomutra



Sr.No	Chemical component	Quantity
1	Protein	0.1037 gm/lit
2	Uric Acid	135.28 gm/lit
3	Urea	5.5418 mmol/lit
4	Creatinine	0.9970 gm/lit
5	Lactate	3.7830 mmol/lit
6	Total Phenol	4.7850 mg/100ml
7	Halogenated Phenol	1.3420 mg/ 100ml
8	Vitamin A	2.7030 mg/100ml
9	Vitamin C	216.40 mg/lit

Sr.No	Chemical component	Quantity
10	Vitamine B1	444125 mh/lit
11	Lactate Dehydrogenase	21.780 unit/lit
12	Alkaline phosphate	110110 k.k. unit
13	Calcium	5.735 mmol/lit
14	Phosporus	0.5805 mmol/lit

As per study done by Govidyan Anusandhan kendra , Develapar

Pharmaceutical Dosage Forms of Gomutra



1. Fresh Gomutra
2. Gomutra Ark
3. Gomutra Ghana Vati
4. Panchagavya
5. Formulation comprises of Gomutra
 - Vati- Sanjeevani Vati , Punarnava Mandoor, Gomutra Haritaki
 - Kshar
 - Basti :- Vaitarna Basti

Fresh Gomutra



Gomutra mentioned in Ayurveda text is considered to be collected early in morning & should be taken immediately after collection (fresh cow urine)

Over Period of storage time certain physico-chemical changes take place which leads to obnoxious odor, increase in chloride, ammonia content & reduction in Bio enzyme level.

Gomutra is mentioned in Ayurveda & for treatment supposed to be derived from healthy cows belongs to Indian breed only.



Gomutra Ark

1. Gomutra Ark is distillate of Gomutra
2. Most widely used form of Gomutra
3. It is excellent----
 - Antioxidant ,
 - Bioenhancer
 - Anti-diabetic effect
 - Anticlastogenic effect
 - Hepatoprotective activity
 - Anti-genotoxic properties



USE OF BIOACTIVE FRACTION FROM COW URINE DEISTILATE (GO-MUTRA) AS A BIO-ENHANCER OF ANTI-INFECTIVE, ANTI-CANCER AGENT AND NUTRIENTS

U.S PATENT- US 6,896,907 B2

PHARMACEUTICAL COMPOSITION CONTAINING COW URINE DISTILLATE AND AN ANTIBIOTIC

U.S PATENT- US 6,410,059 B1

Work conducted by Govidyana Anusandhan Kendra , Devalapar.



- Being distilled fraction of Gomutra , all bio-components are not present in Gomutra ark .
- Not stable for prolonged period
- Taste & odor are prime concerns for patient

Gomutra Ghanavati



Gomutra Ghana vati is prepared by conventional way.

Being solid fraction of Gomutra, it does not possess all therapeutic properties similar to Gomutra

Gomutra Ghanavati is hygroscopic also .

Unpleasant taste & odour is not masked during process.





No for Gomutra & its formulations

In spite of having so many therapeutic applications use of Gomutra & its other forms (Ghanavati etc.) are not up that mark , reasons behind them are -----

- Pungent smell & unpleasant taste of Gomutra
- Lack of stability of Gomutra
- Lack of availability of Gomutra in urbans & sub urbans as Ayurvedic physician believes in medicinal properties of Gomutra derived from cows belong to Indian Breed only.





Gomutra Powder

Gomutra powder is nothing but stable & concentrated powder form of fresh gomutra.

Unpleasant Taste & dour is not experienced once Gomutra powder Capsulated



Indian Patent Application :-

A PROCESSED COW URINE DRY POWDER AND PROCESS OF PREPARATION FOR THE SAME.

3440 / MUM / 2013

Processing of Gomutra powder

Collection of gomutra form Health cows belongs to Indian breed



Quality testing of Gomutra at manufacturing unit



Removal of aqueous part under vacuum by subjecting to temperature for short period



Quality testing of Gomutra powder



Capsulation of Gomutra powder

Comparison with other Pharmaceutical Dosage Form of Gomutra

Sr No.	Name of components	Gomutra powder	Gomutra (Urine)	Gomutra Arka	Method used for analysis
1	Total Phenol	0.90 %	0.09%	0.05 %	Folin-Ciocalteu's Method
2	Uric acid	5.4 ppm	3.3 ppm	0.2 ppm	DGHS Manual
3	Protein	4.2 %	1.1%	2.7 %	IS 7219-1973 RA: 2012
4	Vitamin C	< 20 ppm	< 20 ppm	< 20 ppm	AOAC 967.21
5	Alkaline Phosphate as PO ₄	<0.50 ppm	<0.50 ppm	<0.50 ppm	APHA 4500P C
6	Calcium	2207 ppm	207ppm	39 ppm	AOAC 985.35
7	Phosphorus as P	483 ppm	<0.50 ppm	<0.50 ppm	APHA 4500P C


Envirocare labs pvt. ltd.
 Analysis and Beyond...

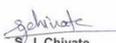
 Enviro House,
 A-7, MIDC, Wagle Industrial Estate,
 Main Road, Thane - 400 604, India
 Telefax : +91 22 2583 8286 - 89

 www.envirocare.co.in
 info@envirocare.co.in

Envirocare labs pvt. ltd.
 Analysis and Beyond...

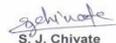
 Enviro House,
 A-7, MIDC, Wagle Industrial Estate,
 Main Road, Thane - 400 604, India
 Telefax : +91 22 2583 8286 - 89

 www.envirocare.co.in
 info@envirocare.co.in

TEST REPORT			
Sample /Report No.	TH/SS/10/12/45		
Name of Customer	M/s. PITAMBARI PRODUCTS PVT LTD		
Address of Customer	R 612 TTC Industrial Estate MIDC Rabale Navi Mumbai 400 701		
Order / Reference	Email Offer Dated :- 22.10.2012		
Name of Sample	Gomutra Powder – RD/GP-2		
Sample drawn by	Customer	Sample received on	26.10.2012
Start of Analysis	26.10.2012	End of Analysis	21.11.2012
Sample Container	Plastic	Sample Quantity	20 gm
Parameter	Results	Units	Method
Specific Parameters			
Protein	4.69	%	IS 7219-1973 RA 2012
Uric Acid	4.03	ppm	DGHS Manual
Urea	ND	ppm	GAFTA 2003
Total Phenol	3.18	%	Folin – Ciocalteu's Method
Vitamin A	ND	mg/100 gm	AOAC 974.29
Vitamin C	33.22	mg/100 gm	AOAC 967.21
Alkaline Phosphate as PO ₄	0.12	%	APHA 4500 – P B/C
Calcium	63.88	mg/100 gm	AOAC 985.35
Phosphorus as P	0.039	%	APHA 4500 – P B/C
Note :- ND – Not Detected.			
 S.J. Chivate Manager – Food		 Dr. P.N. Amritkar Director	

This report can not be reproduce in parts

Page 1 of 1

TEST REPORT			
Sample /Report No.	TH/SS/10/12/44		
Name of Customer	M/s. PITAMBARI PRODUCTS PVT LTD		
Address of Customer	R 612 TTC Industrial Estate MIDC Rabale Navi Mumbai 400 701		
Order / Reference	Email Offer Dated :- 22.10.2012		
Name of Sample	Gomutra Ark – RD/GA-2		
Sample drawn by	Customer	Sample received on	26.10.2012
Start of Analysis	26.10.2012	End of Analysis	21.11.2012
Sample Container	Plastic Bottle	Sample Quantity	100 ml
Parameter	Results	Units	Method
Specific Parameters			
Protein	1.59	%	IS 7219-1973 RA 2012
Uric Acid	ND	ppm	DGHS Manual
Urea	ND	ppm	GAFTA 2003
Total Phenol	0.052	%	Folin – Ciocalteu's Method
Vitamin A	ND	mg/100 gm	AOAC 974.29
Vitamin C	10.01	mg/100 gm	AOAC 967.21
Alkaline Phosphate as PO ₄	0.10	%	APHA 4500 – P B/C
Calcium	2.64	mg/100 gm	AOAC 985.35
Phosphorus as P	0.034	%	APHA 4500 – P B/C
Note :- ND – Not Detected.			
 S.J. Chivate Manager – Food		 Dr. P.N. Amritkar Director	

This report can not be reproduce in parts

Page 1 of 1

Stability Study of Gomutra

Sr. No.	Condition →	Gomutra capsules at Room Temperature	Gomutra capsules at 45°C/75%RH	Gomutra capsules at Refrigeration
Microbiological testing				
1	Initial	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent
	Total phenol	1.75 %	1.79%	1.70%
2	3 Month	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent
	Total phenol	1.69%	1.72%	1.68%

Sr. No.	Condition →	Gomutra capsules at Room Temperature	Gomutra capsules at 45°C/75%RH	Gomutra capsules at Refrigeration
3	6 Month	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent
	Total phenol	1.65%	1.69%	1.64%
4	12Month	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent	TBC-< 10 ¹ cfu /g Y &M-< 10 ¹ cfu /g Coliform-Absent <i>E. coli</i> -Absent <i>Ps. aeruginosa</i> -Absent <i>S. aureus</i> -Absent Salmonella-Absent
	Total phenol	1.50%	1.59%	1.57%

In Vitro Evolution of Gomutra Powder



- Gomutra powder was observed to be active on MCF7, HCT15, U373MG and Ovkar-3 in the assay system used.
- Gomutra powder shows Potential as Anti Cancer Active against the tested Cell Lines.

Gomutra powder - Clinical surveys



- Gomutra powder in dose of 650mg found to be effective in obesity . Average weight loss of 1.5 ± 0.25 kg has been observed per month.
- Generalized symptoms of skin disorders are relieved with Gomutra powder.
- Relief in chronic disorder (such as Amavata, Dhatu avarothajanya Sandhi vata) has been observed .
- Generalised G.I.T symptoms (Indigestion ,Gaseous abdominal distention ,mild constipation) has been relieved with Gomutra powder

Triphala



Triphala is consist of three Myrobalans, Terminalis chebula (Haritaki), Terminalis belerica(Bibhitaka), Embelica officinalis(Amalaki)



The formulation generally consist equal proportion of pericarps of this myrobalans.



Triphala & Its properties



Dravya	Haritaki	Bibhitak	Amalaki	triphala
Rasa	Pacharasa (kashay)	Katu	Pancharasa (Amla)	Kashay
Guna	Laghu,Ruksha	Laghu,Ruksha	Laghu,Ruksha	Ruksha , Sara
Virya	Ushna	Ushna	sheet	Anushna
Vipaka	Madhura	Madhura	Madhura	Madhura
Prabhav	Rasayana	Rasayana	Chedan	Rasayana
Dodhghnata	Vata	Kapha	Pitta	Tridosha
Karma	Anuloman.Deepan, Sarva doshprashman	Keshya, Bhedak,kasahara	Vrishya	Deepan, Ruchikara , Vrana ropana, Medohara

Gomutra Powder & Triphala -Synergism



Sr.No	Ingradient	Quantity
1	Gomutra Powder	338 mg
2	Triphala Extract (10:1)	62 mg
		400 mg



	Gomutra Powder	Triphala extract	Gomutra plus Capsule	
Total phenol Content	1.5 %	3.35	5.12 %	
Tannin		4.95	5.7 %	

<p>STABILIZED FORMULATION OF COW URINE IN COMBINATION WITH HERBS, METHOD TO PREPARE THE SAME AND USES THERE OF</p>	<p>TEMP/E-1/34204/2014-MUM</p>
--	--------------------------------



- further studies are in process to elucidate the mechanism of action of Gomutra Powder in Hyperlipidimia, Diabetes mellitus ,Skin disorders & its synergism with triphala

Thank you ...

