



# International Journal Research Publication Analysis

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## “A REVIEW OF THE INDIAN PHARMACOPOEIA-2022 MONOGRAPHS IN VOLUME-III”

\*Dr. V. M. Mounnissamy.,

Department of Pharmaceutical Chemistry, College of Pharmacy, Mother Theresa Post Graduate and Research Institute of Health Sciences, (Government of Puducherry Institution), Puducherry-605 006.

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**\*Corresponding Author: Dr. V. M. Mounnissamy**

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Post Graduate and Research Institute of Health Sciences, (Government of

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### ABSTRACT

This paper focuses on continuation of our previous paper<sup>1</sup> by systematically compiling monographs of Vitamins, Minerals, Amino acids, Fatty acids, Phytopharmaceuticals, Herbs and Herbal Products, Vaccines and immunosera for human use, Blood and blood related products, Biotechnology derived Therapeutic products and Radiopharmaceutical preparations in Volume-III of Indian Pharmacopoeia-2022 based on their Number, Assay Standards, Drug categories (API/Formulation), and Therapeutic Uses. The initiative aims to create a reliable, well-organized, and easily accessible digital repository that enhances knowledge, promotes clarity, and supports academic and Professional advancement. By preserving and presenting this critical scientific information, the project contributes to continuous learning, research innovation, and the maintenance of high standards in Pharmaceutical quality control.

**KEYWORDS:** Pharmacopoeia, Assay Methods, Category, Nature of Drugs, Phytopharmaceuticals, Radiopharmaceuticals, Blood and Blood related products.

### INTRODUCTION

The digitalization of library resources by the Government of India highlights a growing need for well-organized and accessible Pharmacopoeial archives. Despite the availability of physical volumes, earlier editions of the Pharmacopoeia remain scattered and inadequately compiled, limiting their potential value to researchers and professionals.

## RESULTS

**Table-1: Correlation of Monographs on Vitamins, Minerals, Amino Acids, Fatty Acids In I.P-2022 (Volume-Iii)-117 Monographs**

S.No	Name of The Drug	Category	Nature	Assay Method
1.	Oil-soluble vitamin capsule	Source of vitamins	Drug product	HPLC and UV
2.	Oil-Soluble Vitamins Oral Solution	Source of vitamins	Drug product	HPLC
3.	Oil-Soluble Vitamins Tablets	Source of vitamins	Drug product	HPLC and UV
4.	Water-Soluble Vitamins Capsules	Source of vitamins	Drug product	HPLC
5.	Water-Soluble Vitamins Tablets	Source of vitamins	Drug product	HPLC and REDOX
6.	Alfacalcidol	Aritioosteoporotic.	Drug substance	HPLC
7.	Arginine	$\alpha$ -amino acid.	Drug substance	Potentio-metry
8.	Ascorbic Acid	Vitamin (antiscorbutic) and pharmaceutical aid (antioxidant).	Drug substance	Iodimetry
9.	Ascorbic Acid Injection	Vitamin C deficiency	Drug product	Iodimetry
10.	Ascorbic Acid Tablets	Vitamin C deficiency	Drug product	HPLC
11.	Biotin	Vitamin	Drug substance	HPLC
12.	Calcipotriol Anhydrous	Antipsoriasis	Drug substance	HPLC
13.	Calcipotriol Ointment	Antipsoriasis	Drug product	HPLC
14.	Calcitriol	Vitamin D analogue	Drug substance	HPLC
15.	Calcitriol Capsule	Vitamin D analogue	Drug product	HPLC
16.	Calcium Carbonate	Antacid; Pharmaceutical aid (excipient).	Drug substance	Complexo-metry
17.	Calcium Carbonate Tablet	Antacid	Drug product	Complexo-metry
18.	Calcium Chloride	Calcium replenisher	Drug substance	Complexo-metry
19.	Calcium Chloride Injection	Calcium replenisher	Drug product	Complexo-metry
20.	Calcium Citrate Malate	Calcium supplement.	Drug substance	Complexo-metry
21.	Calcium Folinate	Antidote to folate antagonists.	Drug substance	HPLC
22.	Calcium Folinate Injection	Antidote to folate antagonists	Drug product	HPLC
23.	Calcium Gluconate	Calcium replenisher.	Drug substance	Complexo-metry
24.	Calcium Gluconate Injection	Calcium replenisher	Drug product	Complexo-metry
25.	Calcium Gluconate Tablets	Calcium replenisher	Drug product	Complexo-metry

26.	Calcium Pantothenate	B-group vitamin (enzyme co-factor).	Drug substance	Potentiometry
27.	Calcium Pantothenate Tablets	B-group vitamin (enzyme co-factor).	Drug product	HPLC
28.	Dibasic Calcium Phosphate	Calcium supplement; pharmaceutical aid (excipient)	Drug substance	Complexometry
29.	Tribasic Calcium Phosphate	Pharmaceutical aid (excipient).	Drug substance	Complexometry
30.	Calcium and Vitamin D3 Tablets	Calcium and Vit.D defecency	Drug product	Complexometry
31.	Cholecalciferol	Vitamin D (antirachitic).	Drug substance	HPLC
32.	Cholecalciferol Injection	Vitamin D (antirachitic).	Drug product	UV
33.	Cholecalciferol Tablets	Vitamin D (antirachitic).	Drug product	HPLC
34.	Cholecalciferol Concentrate (Powder Form)	Vitamin D (antirachitic)	Drug product	HPLC
35.	Chromium Picolinate	Dietary suppliment	Drug substance	AAS
36.	CitricAcid	Pharmaceutical aid; anticoagulant for storage of whole blood (along with sodium citrate).	Drug substance	Acid-base
37.	Citric Acid Monohydrate	Pharmaceutical aid; anticoagulantfor storage of whole blood (along with sodium citrate)	Drug substance	Acid-base
38.	Copper Gluconate	Pharmaceutical aid; anticoagulantfor storage of whole blood (along with sodium citrate)	Drug substance	Iodometry
39.	Cyanocobalamin	B-group Vitamin; haematopoietic.	Drug substance	UV
40.	Cyanocobalamin Injection	B-group Vitamin; haematopoietic.	Drug product	UV
41.	Ergocalciferol	Vitamin D deficiency	Drug substance	HPLC
42.	Ergocalciferol Tablets	Vitamin D deficiency	Drug product	HPLC
43.	Ferrous Ascorbate	Haematinic	Drug substance	UV and Iodimetry
44.	ferrous Ascorbate and Folic Acid Suspension	Haematinic	Drug substance	UV and HPLC
45.	FerrousFumarate	Haematinic.	Drug substance	Cerimetric titration
46.	Ferrous Fumarate Tablets	Haematinic	Drug product	Cerimetric titration
47.	Ferrous Gluconate	Haematinic.	Drug substance	Cerimetric titration
48.	Ferrous Gluconate Tablets	Haematinic	Drug product	Cerimetric titration
49.	Ferrous Sulphate	Haematinic.	Drug substance	Cerimetric titration

50.	Dried Ferrous Sulphate	Haematinic.	Drug substance	Cerimetric titration
51.	Ferrous Sulphate Tablets	Haematinic	Drug product	Cerimetric titration
52.	Folic acid	Haematinic.	Drug substance	HPLC
53.	Folic Acid Tablets	Haematinic (folate deficiency)	Drug product	HPLC
54.	Folic Acid and Methylcobalamin Tablets	Haematinic (Folate and vitanmin B12 deficiency)	Drug product	HPLC
55.	Glutamic Acid	Amino Acid.	Drug substance	Potentio-metry
56.	Glycine	Bladder irrigation agent; pharmaceutical aid.	Drug substance	NAT
57.	Inositol	Carbohydrate.	Drug substance	HPLC
58.	Iron and Ammonium Citrate	Haernatinic.	Drug substance	Iodometry
59.	Iron and Folic Acid Syrup	Anemia	Drug product	Cerimetric titration and HPLC
60.	Iron and Folic Acid Tablets	Anemia	Drug product	Cerimetric titration
61.	Levocarnitine	Carnitine deficiency.	Drug substance	HPLC
62.	Lutein	Antioxident,eye health	Drug substance	HPLC
63.	Lysine Hydrochloride	Essential Amino acid	Drug substance	NAT
64.	Heavy Magnesium Carbonate	Antacid; osmotic laxative;	Drug substance	Complexometry
65.	Light Magnesium Carbonate	Antacid; osmotic laxative.	Drug substance	Complexometry
66.	Magnesium Chloride	Constituent of peritoneal dialysis solutions.	Drug substance	Complexometry
67.	Heavy Magnesium Oxide	Antacid; osmotic laxative	Drug substance	Complexometry
68.	Light Magnesium Oxide	Antacid; osmotic laxative.	Drug substance	Complexometry
69.	Magnesium Sulphate	Osmotic laxative; used in the treatment of electrolyte deficiency.	Drug substance	Complexometry
70.	Magnesium Sulphate Injection	Osmotic laxative; used in the treatment of electrolyte deficiency.	Drug product	Complexometry
71.	Magnesium Trisilicate	Antacid.	Drug substance	Complexometry and Gravimetry
72.	Methylcobalamin	Vitamin.B12	Drug substance	HPLC
73.	Nicotinamide	B-group vitamin.	Drug substance	HPLC
74.	Nicotinamide Tablets	Nutritional deficiency of Vitamin B	Drug product	UV
75.	Nicotinic Acid	B-group vitamin.	Drug substance	Acid-base
76.	Nicotinic Acid Tablets	B-group vitamin	Drug product	Acid-base

77.	D-Panthenol	Vitamin B (enzyme co-factor).	Drug substance	Kjeldahl method
78.	Pepsin	Proteolytic enzyme.	Drug substance	Albumin Digestion assay
79.	Phenylalanine	Amino acid	Drug substance	Potentiometry
80.	Phytomenadione	Vitamin K analogue, anticoagulant.	Drug substance	HPLC
81.	Phytomenadione Injection	Vitamin K analogue, anticoagulant.	Drug product	HPLC
82.	Potassium Chloride	Electrolyte replenisher	Drug substance	Precipitation titration
83.	Potassium Chloride for Injection	Electrolyte replenisher	Drug product	AAS
84.	Potassium Citrate	Systemic alkaliniser	Drug substance	NAT
85.	Potassium Iodide	Antithyroid; antifungal; expectorant	Drug substance	Iodometry
86.	Potassium Sorbate	Food preservative.	Drug substance	NAT
87.	Pyridoxine Hydrochloride	B group vitamin; sideroblastic anaemia therapy; anti-isoniazid neuropathy.	Drug substance	NAT
88.	Pyridoxine Tablets	B group vitamin; sideroblastic anaemia therapy; anti-isoniazid neuropathy.	Drug product	UV
89.	Riboflavin	Vitamin B	Drug substance	UV
90.	Riboflavin Sodium Phosphate	B-group vitamin	Drug substance	UV
91.	Riboflavin Tablets	B-group vitamin	Drug product	UV
92.	Selenious Acid	Oxidizing agent.	Drug substance	Iodometry
93.	Selenomethionine	Source of selenium	Drug substance	HPLC
94.	Sodium Citrate	Systemic alkalinising agent	Drug substance	NAT
95.	Thiamine Hydrochloride	B-group vitamin.	Drug substance	Potentiometry
96.	Thiamine Injection	B-group vitamin	Drug product	HPLC
97.	Thiamine Tablets	B-group vitamin	Drug product	HPLC
98.	Thiamine Mononitrate	B-group vitamin.	Drug substance	Potentiometry
99.	Threonine	Amino acid	Drug substance	Potentiometry
100.	Tocopheryl Acetate	Vitamin E supplement.	Drug substance	REDOX
101.	Tryptophan	Amino acid	Drug substance	Potentiometry
102.	Valine	Amino acid	Drug substance	Potentiometry
103.	Vitamin A Capsules	Antixerophthalmic vitamin	Drug product	HPLC
104.	Vitamin A Concentrate Oil	Antixerophthalmic vitamin	Drug product	Assay of vitamin A

105.	Vitamin A Concentrate Powder	Antixerophthalmic vitamin;	Drug product	Assay of vitamin A
106.	Water-Miscible Vitamin A Concentrate	Antixerophthalmic vitamin.	Drug product	Assay of vitamin A
107.	Vitamin A Paediatric Oral Solution	Antixerophthalmic vitamin	Drug product	HPLC
108.	Vitamins A and D Capsules	Antixerophthalmic and antirachitic vitamins.	Drug product	Assay of vitamin A and D
109.	Concentrated Vitamin D Solution	Antirachitic vitamin	Drug product	Assay of vitamin D
110.	Concentrated Vitamins A and D Solution	Antixerophthalmic and antirachitic vitamins.	Drug product	Assay of vitamin A and D
111.	Zinc Chloride	Astringent;Pharmaceutical aid.	Drug substance	Complexometry
112.	Zinc Chloride Injection	Zinc deficiency, Astringent	Drug product	AAS
113.	Zinc Citrate	Mineral supplement	Drug substance	Complexometry
14.	Zinc Sulphate	Astringent.	Drug substance	Complexometry
115.	Zinc Sulphate Monohydrate	Astringent.	Drug substance	Complexometry
116.	Zinc Sulphate Oral Solution	Astringent	Drug product	Complexometry
117.	Zinc Sulphate Dispersible Tablets	Astringent	Drug product	Complexometry

**Table- 2: CORRELATION OF MONOGRAPHS ON PHYTOPHARMACEUTICALS IN I.P-2022 (VOLUME-III)-7 Monographs**

S.No	Name of the Drug	Category	Nature	Assay Method
1.	Aegle marmelos PPI	Antidiarrhoeal, antimicrobial, antiulcerative, antilipidemic, antidyslipidaemic.	Drug substance	HPLC
2.	Andrographis paniculata PPI	Antiinflammatory, hepatoprotectant, analgesic, antipyretic, anticancer, antimicrobial, antidiabetic, antimalaria! and anthelmintic.	Drug substance	HPLC

3.	Curcuma longa PPI	Antioxidant, antibacterial, antifungal, antiinflammatory, platelet aggregation inhibitor, cytotoxic, antiallergic, hypotriglyceridemic, enterokinase inhibitor, CNS depressant, analgesic.	Drug substance	HPLC
4.	Gymnema sylvestre PPI	Antidiabetic, hepatoprotectant, antimicrobial and Antiinflammatory	Drug substance	HPLC
5.	Lawsonia inermis PPI	Astringent, antineoplastic, cardioinhibitory, hypotensive, sedative, antimicrobial.	Drug substance	HPLC
6.	Phyllanthus amarus PPI	Hepatoprotective, astringent, stomachic, diuretic, febrifugal, antiseptic.	Drug substance	HPLC
7.	Silybum marianum Dry Extract PPI	Hepatoprotective, chemopreventive	Drug substance	HPLC

**Table- 3: CORRELATION OF MONOGRAPHHS ON HERBS AND HERBAL PRODUCTS IN I.P-2022 (VOLUME-III)-164 Monographs**

S.No	Name of the Drug	Category	Nature	Assay Method
1.	Acacia	Pharmaceutical aid, Antidiabetic	Drug substance	GC
2	Ajwain	Antiasthmatic, carminative, Germicidal, Antioxidant	Drug substance	GC
3	Amalaki	Antiscorbutic, antacid, carminative, hepatoprotective	Drug substance	HPLC
4	Amaltas	Purgative, diuretic, antipruritic, febrifuge, vibardica	Drug substance	HPLC
5	Amarbel	Antidiabetic, sphrodisiac, antiaging, Hepatoprotective,	Drug substance	HPLC
6	Amla Juice Powder	Antiscorbutic, antacid, carminative, Hepato-protective, raktapitta	Drug substance	Redox
7	Amra	Cardiotonic, astringent, nourishing tonic in haemoptysis, atisara	Drug substance	HPLC
8	Anantmula	Antioxidant, antileprotic, in skin diseases, arnci	Drug substance	HPLC

9	Anise Oil	Antispasmodic, expectorant, carminative antibacterial, anticancer	Drug substance	GC
10	Arachis Oil	Pharmaceutical aid	Drug substance	
11	Arjuna	Antihyperlipidaemic, antihypertensive, astringent	Drug substance	HPLC
12	Arjuna Dry Extract	Antihyperlipidaemic, antihypertensive, astringent	Drug substance	HPLC
13	Artemisia	Antimalarial, antibacterial, cytotoxic, antihelmintic	Drug substance	HPTLC
14	Ashwagandha	Adaptogenic, alterative, antidepressant, ksaya	Drug substance	HPLC
15	Ashwagandha Dry Extract	Adaptogenic, alterative, antidepressant, ksaya	Drug substance	HPLC
16	Asoka	Tonic, oxytoxic	Drug substance	TLC
17	Asthisamhrta	Anti-osteoporotic, anti-haemorrhoidal, analgesic, anti-oxidant, anti-inflammatory	Drug substance	HPLC
18	Bakuchi	Leucoderma	Drug product	TLC
19	Bala	Astringent, diuretic, urinary infections, migdna	Drug substance	TLC
20	Basil Oil	Skin diseases; inflammatory	Drug product	GC
21	Bassant	Antidepressant, anxiolytic, sedative, anti-oxidant and anti-ulcerogenic	Drug substance	HPLC
22	Bassant Dry Extract	Antidepressant, anxiolytic, sedative, anti- inflammatory and anti-ulcerogenic	Drug substance	HPLC
23	Belladonna Leaf	Anticholinergic	Drug substance	UV
24	Belladonna Dry Extract	Anticholinergic	Drug substance	HPLC
25	Belladonna Dry Extract Tablets	Anticholinergic	Drug product	HPLC
26	Belladonna Soft Extract	Anticholinergic	Drug product	HPLC
27	Belladonna Tincture	Anticholinergic	Drug product	Acid Base titration
28	Berberine Chloride	Bitter stomachic, anti-bacterial.	Drug substance	HPLC
29	Bhibhitaki	Purgative, expectorant, antihyperlipidaemic	Drug substance	HPLC
30	Bhibhitaki Aqueous Extract	Purgative, expectorant, antihyperlipidaemic	Drug substance	HPLC
31	Bhringraj	Hepatoprotective, cardiotonic	Drug substance	HPLC

32	Bhuiamla Dry Extract	Antiviral, hepatoprotective, antidiabetic, kasaaya	Drug substance	HPLC
33	Birmi	Anticancer, analgesic, anti inflammatory; anti convulsant and anti pyretic.	Drug substance	HPLC
34	Black Pepper Oil	Anti-oxidant; anti-inflammatory	Drug product	GC
35	Brahmi	Braintonic, antiinflammatory, adaptogenic, kustha	Drug substance	HPLC
36	Brahmi Extract	Braintonic, antiinflammatory, adaptogenic, kustha	Drug substance	HPLC
37	Caraway Oil		Drug product	GC
38	Cardamom Oil		Drug product	GC
39	Cassia Oil	Antidiarrhoeal, antiviral and antibacterial	Drug substance	GC
40	Castor Oil (Refined grade)	Irritant puragative, antirheumatic, amavata	Drug product	GC
41	Castor Oil (Virgin grade)	Irritant puragative, antirheumatic, amavata	Drug product	GC
42	Chaulai	Antioxidant, astringent, antipyretic and demulcent	Drug substance	HPLC
43	Chitrak	Antibacterial, antidiabetic, cardiotonic, ariti-convulsant, neuroprotective	Drug substance	HPLC
44	Cinnamon Bark Oil	Antiemetic, antidiarrhoeal, anti-inflammatory.	Drug product	GC
45	Cinnamon Leaf Oil	Antiemetic, antidiarrhoeal, anti-inilammatory.	Drug product	GC
46	Citronella Oil (Geraniol Type)	Astringent, anti spasmodic, anti inflammatory	Drug product	GC
47	Citronella Oil (Java Type)	Astringent, anti spasmodic, anti inflammatory	Drug product	GC
48	Clove Bud Oil	Used in toothache, headache, kasa	Drug product	GC
49	Clove Leaf Oil	Analgesic, Antimicrobial; antiinflammatory	Drug product	GC
50	Clove Stem Oil	Soap and perfume, aromatherapy	Drug product	GC
51	Coconut Oil	Antieczematous, antipsoriatic, Kesya	Drug product	GC
52	Coleus	Cardiac stimulant, hypotensive, spasmolytic	Drug substance	HPLC

53	Coleus Dry Extract	Cardiac stimulant, hypotensive, spasmolytic	Drug substance	HPLC
54	Coriander Oil	Carminative, jvara, deepan-pacahn	Drug product	GC
55	Cumin Oil		Drug product	GC
56.	Glycine	Bladder irrigation agent; pharmaceutical aid.	Drug substance	NAT
57.	Inositol	Carbohydrate.	Drug substance	HPLC
58.	Iron and Ammonium Citrate	Haernatinic.	Drug substance	Iodometry
59.	Iron and Folic Acid Syrup	Anemia	Drug product	Cerimetric titration and HPLC
60.	Iron and Folic Acid Tablets	Anemia	Drug product	Cerimetric titration
61.	Levocarnitine	Carnitine deficiency.	Drug substance	HPLC
62.	Lutein	Antioxidant, eye health	Drug substance	HPLC
63.	Lysine Hydrochloride	Essential Amino acid	Drug substance	NAT
64.	Heavy Magnesium Carbonate	Antacid; osmotic laxative;	Drug substance	Complexometry
65.	Light Magnesium Carbonate	Antacid; osmotic laxative.	Drug substance	Complexometry
66.	Magnesium Chloride	Constituent of peritoneal dialysis solutions.	Drug substance	Complexometry
67.	Heavy Magnesium Oxide	Antacid; osmotic laxative	Drug substance	Complexometry
68.	Light Magnesium Oxide	Antacid; osmotic laxative.	Drug substance	Complexometry
69.	Magnesium Sulphate	Osmotic laxative; used in the treatment of electrolyte deficiency.	Drug substance	Complexometry
70.	Magnesium Sulphate Injection	Osmotic laxative; used in the treatment of electrolyte deficiency.	Drug product	Complexometry
71.	Magnesium Trisilicate	Antacid.	Drug substance	Complexometry and Gravimetry
72.	Methylcobalamin	Vitamin B12	Drug substance	HPLC
73.	Nicotinamide	B-group vitamin.	Drug substance	HPLC
74.	Nicotinamide Tablets	Nutritional deficiency of Vitamin B	Drug product	UV
75.	Nicotinic Acid	B-group vitamin.	Drug substance	Acid-base

76.	Nicotinic Acid Tablets	B-group vitamin	Drug product	Acid-base
77.	D-Panthenol	Vitamin B (enzyme co-factor).	Drug substance	Kjeldahl method
78.	Pepsin	Proteolytic enzyme.	Drug substance	Albumin Digestion assay
79.	Phenylalanine	Amino acid	Drug substance	Potentiometry
80.	Phytomenadione	Vitamin K analogue, anticoagulant.	Drug substance	HPLC
81.	Phytomenadione Injection	Vitamin K analogue, anticoagulant.	Drug product	HPLC
82.	Potassium Chloride	Electrolyte replenisher	Drug substance	Precipitation titration
83.	Potassium Chloride for Injection	Electrolyte replenisher	Drug product	AAS
84.	Potassium Citrate	Systemic alkaliniser	Drug substance	NAT
85.	Potassium Iodide	Antithyroid; antifungal; expectorant	Drug substance	Iodometry
86.	Potassium Sorbate	Food preservative.	Drug substance	NAT
87.	Pyridoxine Hydrochloride	B group vitamin; sideroblastic anaemia therapy; anti-isoniazid neuropathy.	Drug substance	NAT
88.	Pyridoxine Tablets	B group vitamin; sideroblastic anaemia therapy; anti-isoniazid neuropathy.	Drug product	UV
89.	Riboflavin	Vitamin B	Drug substance	UV
90.	Riboflavin Sodium Phosphate	B-group vitamin	Drug substance	UV
91.	Riboflavin Tablets	B-group vitamin	Drug product	UV
92.	Selenious Acid	Oxidizing agent.	Drug substance	Iodometry
93.	Selenomethionine	Source of selenium	Drug substance	HPLC
94.	Sodium Citrate	Systemic alkalinising agent	Drug substance	NAT
95.	Thiamine Hydrochloride	B-group vitamin.	Drug substance	Potentiometry
96.	Thiamine Injection	B-group vitamin	Drug product	HPLC

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97.	Thiamine Tablets	B-group vitamin	Drug product	HPLC
98.	Thiamine Mononitrate	B-group vitamin.	Drug substance	Potentiometry
99.	Threonine	Amino acid	Drug substance	Potentiometry
100.	Tocopheryl Acetate	Vitamin E supplement.	Drug substance	REDOX
101.	Tryptophan	Amino acid	Drug substance	Potentiometry
102.	Valine	Amino acid	Drug substance	Potentiometry
103.	Vitamin A Capsules	Antixerophthalmic vitamin	Drug product	HPLC
104.	Vitamin A Concentrate Oil	Antixerophthalmic vitamin	Drug product	Assay of vitamin A
105.	Vitamin A Concentrate Powder	Antixerophthalmic vitamin;	Drug product	Assay of vitamin A
106.	Water-Miscible Vitamin A Concentrate	Antixerophthalmic vitamin.	Drug product	Assay of vitamin A
107.	Vitamin A Paediatric Oral Solution	Antixerophthalmic vitamin	Drug product	HPLC
108.	Vitamins A and D Capsules	Antixerophthalmic and antirachitic vitamins.	Drug product	Assay of vitamin A and D
109.	Concentrated Vitamin D Solution	Antirachitic vitamin	Drug product	Assay of vitamin D
110.	Concentrated Vitamins A and D Solution	Antixerophthalmic and antirachitic vitamins.	Drug product	Assay of vitamin A and D
111.	Zinc Chloride	Astringent;Pharmaceutical aid.	Drug substance	Complexometry
112.	Zinc Chloride Injection	Zinc deficiency, Astringent	Drug product	AAS
113.	Zinc Citrate	Mineral supplement	Drug substance	Complexometry
113	Mirch	Analgesic, anti-inflammatory, antibacterial	Drug substance	HPLC
114	Nagakesar	Raktapitta, vatarakta, immunomodulator, wound Healing	Drug substance	HPLC
115	Neem	Antileprotic, antipruritic, antifertility	Drug substance	HPLC
116	Nirgundi	Analgesic, anti-inflammatory and antirheumatic	Drug substance	HPLC

117	Noni	Antidiabetic, immunomodulator	Drug substance	HPLC
118	Nutmeg Oil	Analgesic, anti-inflammatory and antirheumatic	Drug product	GC
119	Opium	Narcotic analgesic, antitussive	Drug substance	HPLC
120	Opium Powder	Narcotic analgesic, antitussive	Drug product	HPLC
121	Papain	Proteolytic enzyme	Drug substance	Acid Base
122	Patha	Antidiarrheal, antiemetic, antipyretic, anti-dermis	Drug substance	HPLC
123	Peppermint Oil	Pharmaceutical aid	Drug product	GC
124	Pippali, Large	Antiallergic, antiasthmatic, hepatoprotective	Drug substance	HPLC
125	Pippali, Small	Antiallergic, antiasthmatic, hepatoprotective	Drug substance	HPLC
126	Punarnava	Hepatoprotective, diuretic, antinephritic	Drug substance	HPLC
127	Puskara	Anti-inflammatory, antibacterial and aphrodisiac	Drug substance	Bioassay
128	Sahajana Leaf	Antidiarrhoeal, antibacterial, antiinflammatory, antimicrobial and anticancer	Drug substance	DPPH assay
129	Sahajana Stick	Antidiarrhoeal, antibacterial, antiinflammatory, antimicrobial and anticancer	Drug substance	DPPH assay
130	Sarpagandha	Antihypertensive, antipsychotic, neurosedative. niddrapradaa	Drug substance	HPLC
131	Sarpagandha powder	Anti hypertensive, antipsychotic, neurosedative	Drug product	HPLC
132	Sarpagandha Tablets	Anti hypertensive, antipsychotic, neurosedative	Drug product	HPLC
133	Saunf	Carminative, spasmolytic	Drug product	GC
134	Schisandra Fruit	Energizer, hepatoprotective	Drug substance	HPLC
135	Schisandra Dry Extract	Energizer, hepatoprotective	Drug substance	HPLC
136	Senna Leaf	Purgative, antihelmintic, febrifuge, vibandha	Drug substance	HPLC
137	Powdered Senna Leaf	Purgative, antihelmintic, febrifuge, vibandha	Drug product	HPLC

138	Senna Pods	Purgative, antihelmintic, febrifuge, vibandha	Drug product	HPLC
139	Senna Dry Extract	Purgative, antihelmintic, febrifuge, vibandha	Drug product	HPLC
140	Senna Tablets	Purgative, antihelmintic, febrifuge, vibandha	Drug product	HPLC
141	Shankhpushpi	Antiulcerogenic, anti depressant, antiepileptic, hepatoprotective and anti-inflammatory	Drug substance	HPLC
142	Shatavari	Antiinflammatory, immunomodulatory, neuroprotective and antidysesthesia	Drug substance	HPLC
143	Shati	Antiasthmatic, antiseptic, indicated in skin diseases, analgesic, kasa	Drug substance	HPLC
144	Shellac	Pharmaceutical aid	Drug substance	
145	Siris	Anti-inflammatory, Anti-histaminic, Antioxidant, Antitussive	Drug substance	HPLC
146	Starch	Pharmaceutical aid	Drug substance	
147	Sunthi	Carminative, antiemetic, antiinflammatory	Drug substance	HPLC
148	Sunthi Extract	Carminative, antiemetic, antiinflammatory	Drug substance	HPLC
149	Sweet Orange Oil	Antiseptic, antispasmodic, carminative	Drug product	GC
150	Tea Tree Oil	Stimulant	Drug product	HPLC
151	Tolu Balsam	Expectorant, antiseptic	Drug substance	Acid base
152	Tragacanth	Pharmaceutical aid	Drug substance	AAS
153	Tulasi	Antiasthmatic, immunomodulator, expectorant, swasa	Drug substance	GC
154	Tulasi Dry Extract	Antiasthmatic, immunomodulator, expectorant, Swasa	Drug substance	HPLC
155	Tvak	Carminative, stimulant, anti-helminthic, antidote	Drug substance	GC
156	Upakunchika	Antidiarrheal, antitumor, anthelmintic	Drug substance	HPLC
157	Valerian Root	Anxiety, stress, sleep disorder	Drug substance	HPLC
158	Valerian Dry Extract	Anxiety, stress, sleep disorder	Drug substance	HPLC
159	Vasaka	Expectorant, bronchodilator, kustha	Drug substance	HPLC
160	Vasaka Extract	Expectorant, bronchodilator, kustha	Drug substance	HPLC

161	Vidanga	VermicidaL, antiallergic, anthelmintic	Drug substance	HPLC
162	VijayasarA	Antirheumatic, antidiabetic	Drug substance	TLC
163	Yasti	Expectorant, antiulcer, stomachic	Drug substance	HPLC
164	Yasti Dry Extract	Expectorant, antiulcer, stomachic,	Drug substance	HPLC

**Table- 4: CORRELATION OF MONOGRAPHS ON VACCINES AND IMMUNOSERA FOR HUMAN USE IN I.P-2022 (VOLUME-III)-75 Monographs**

S.NO	NAME OF THE DRUG
1	Adsorbed Diphtheria, Tetanus and Hepatitis B (rDNA) Vaccine
2	Adsorbed Diphtheria, Tetanus, Pertussis (Acellular Component) and Haemophilus influenzae Type bConjugate Vaccine
3	Adsorbed Diphtheria, Tetanus, Pertussis (Acellular Component) and Hepatitis B (rDNA) Vaccine
4	Adsorbed Diphtheria, Tetanus, Pertussis (Acellular Component), Inactivated Poliomyelitis Vaccine and Haemophilus influenzae Type b Conjugate Vaccine
5	Adsorbed Diphtheria, Tetanus, Pertussis (Acellular Component), hepatitis B(rDNA), Poliomyelitis(Inactivated) and Haemophilus influenzae Type b Conjugate Vaccine
6	Adsorbed Diphtheria, Tetanus, Pertussis (Acellular Component) and Inactivated Poliomyelitis Vaccine
7	Adsorbed Diphtheria, Tetanus, Pertussis and Poliomyelitis (Inactivated Vaccine)
8	Adsorbed Diphtheria, Tetanus, Pertussis, Poliomyelitis (Inactivated) andHaemophilus influenzae Type b Conjugate Vaccine
9	Adsorbed Pertussis Vaccine (Acellular Component)
10	Adsorbed Pertussis Vaccine (Acellular, Co-purified)
11	Bacillus Calmette-Guerin Vaccine (Freeze-Dried)
12	BCG for Immunotherapy
13	Bivalent Poliomyelitis Vaccine Type 1 and 3, Live (Oral)
14	Cholera Vaccine (Inactivated, Oral)
15	DiphtheriaAntitoxin
16	Diphtheria and Tetanus Vaccine (Adsorbed)
17	Diphtheriaand Tetanus Vaccine (Adsorbed)for Adultsand Adolescents
18	Diphtheria, Tetanus andPertussis Vaccine (Adsorbed)
19	Diphtheria, Tetanus, Pertussis (Whole Cell), Hepatitis B (rDNA) and Haemophilus influenzae Type b Conjugate Vaccine (Adsorbed)
20	Diphtheria, Tetanus, Pertussis (Whole Cell), Hepatitis B (rDNA), Poliomyelitis (Inactivated) and Haemophilus influenzae Typeb Conjugate Vaccine (Adsorbed)
21	Diphtheria, Tetanus, Pertussis (Whole Cell) and Hepatitis B (rDNA)Vaccine (Adsorbed)
22	Diphtheria, Tetanus, Pertussis (Whole Cell) and Haemophilus influenzae Type bConjugate Vaccine (Adsorbed)
23	Diphtheria Vaccine (Adsorbed)
24	Diphtheria Vaccine (Adsorbed) for Adults and Adolescents
25	Gas-Gangrene Antitoxin (Oedematiens)
26	Gas-Gangrene Antitoxin (Perfringens)

27	Gas-Gangrene Antitoxin (Perfringens)
28	Gas-Gangrene Antitoxin (Septicum)
29	Mixed Gas-Gangrene Antitoxin
30	Haemophilus influenzae Type b Conjugate Vaccine
31	Hepatitis A (Inactivated) and Hepatitis B (rDNA) Vaccine (Adsorbed)
32	Hepatitis B Vaccine (rDNA)
33	Inactivated Hepatitis A Vaccine (Adsorbed)
34	Inactivated Hepatitis B Vaccine
35	Inactivated Influenza Vaccine (Split Virion)
36	Inactivated Influenza Vaccine (Surface Antigen)
37	Inactivated Influenza Vaccine (Whole Virion)
38	Influenza Vaccine (Human, Live Attenuated)
39	Japanese Encephalitis Vaccine (Human)
40	Japanese Encephalitis Live Vaccine (Human)
41	Japanese Encephalitis Vaccine Inactivated (Adsorbed, Human)
42	Measles and Rubella Vaccine (Live)
43	Measles Vaccine (Live)
44	Measles, Mumps and Rubella Vaccine (Live)
45	Group A Meningococcal Conjugate Vaccine
46	Meningococcal Polysaccharide Vaccine
47	Meningococcal Polysaccharide A and C Vaccine
48	Meningococcal Group A, C, W135 and Y Conjugate Vaccine
49	Mumps Vaccine (Live)
50	Pertussis Vaccine (Whole Cell)
51	Plague Vaccine
52	Pneumococcal Polysaccharide Conjugate Vaccine (Adsorbed)
53	Pneumococcal Polysaccharide Vaccine (Liquid/Adsorbed)
54	Poliomyelitis Vaccine (Inactivated)
55	Poliomyelitis Vaccine, Live (Oral)
56	Rabies Antiserum
57	Rabies Vaccine, Human
58	Rotavirus Vaccine (Live Attenuated, Oral)
59	Rubella Vaccine (Live)
60	Scorpion Venom Antiserum
61	Snake Venom Antiserum
62	Tetanus Antitoxin
63	Tetanus Vaccine (Adsorbed)
64	Tick-borne Encephalitis Vaccine (Inactivated)
65	Tuberculin Purified Protein Derivative
66	Typhoid (Strain Ty 21 a) Vaccine, Live (Oral)
67	Typhoid Polysaccharide Vaccine
68	Typhoid Paratyphoid A Vaccine
69	Typhoid Vaccine
70	Typhoid Vaccine (Freeze Dried)
71	Typhoid Vi Conjugate Vaccine
72	Typhus Vaccine
73	Varicella Vaccine (Live)

74	Viper Venom
75	Yellow Fever Vaccine (Live)

**Table-5: CORRELATION OF MONOGRAPHS ON BLOOD AND BLOOD RELATED PRODUCTS IN I.P-2022 (VOLUME-III)-31 Monographs**

S.No.	NAME OF THE DRUG
1	Anti-A Blood Grouping Serum
2	Anti-B Blood Grouping Serum
3	Anti-AB Blood Grouping Reagent
4	Anticoagulant Heparin Solution
5	Anti-D (R1\,),Immunoglobulin
6	Anti-D Immunoglobulin for Intravenous Use
7	Anti-D Immunoglobulin for Intravenous Use
8	Anti-D (IgM) Monoclonal Blood Grouping Reagent
9	Anti-D Blend (IgM + IgG) Monoclonal Reagent
10	Anti-D (tgG) Monoclonal Reagent
11	Anti-Human Globulin (AHG) Serum
12	Antithrombin IH Concentrate
13	Blood Grouping Lectins Anti-A
14	Blood Grouping Lectins Anti-H
15	Blood Grouping Reagents Anti-Fy% Anti-Fyb
16	Blood Grouping Reagents Anti-Jka, Anti-Jkb
17	Blood Grouping Reagents Anti-K, Anti-k
18	Blood Grouping Reagents Anti-Lea, Anti-Le
19	Blood Grouping Reagents Anti-M,Anti-N
20	Blood Grouping Reagents Anti-P t
21	Blood Grouping Reagents Anti-S, Anti-s
22	Blood Grouping Serums
23	Blood Grouping Serums Anti-D, Anti-C, Anti-E, Anti-c, Anti-e
24	Concentrated Human Red Blood Corpuscles
25	Cryoprecipitated Antihaemophilic Factor
26	Dried Human Antihaemophilic Fraction
27	Fibrin Sealant Kit
28	Hepatitis B Immunoglobulin
29	Human Albumin
30	Human Coagulation Factor VH
31	Human Coagulation Factor VUI (rDNA)

**Table- 6: CORRELATION OF MONOGRAPHS ON BIOTECHNOLOGY DERIVED THERAPEUTIC PRODUCTS IN I.P- 2022 (VOLUME-III)-38 Monographs**

S.NO	NAME OF THE DRUG	CATEGORY	NATURE	ASSAY METHOD
1	Calcitonin(Salmon)	Hormone (Antosteoporotic)	Drug Substance	HPLC
2	Calcitonin (Salmon) Injection	Hormone (Antosteoporotic)	Drug Product	HPLC
3	Erythropoietin Concentrated Solution	Treatment of Anemia	Drug Substance	HPLC

4	Erythropoietin for Injection	Treatment of Anemia	Drug Product	HPLC
5	Erythropoietin Injection	Treatment of Anemia	Drug Product	HPLC
6	Filgrastim Concentrated Solution	Haemopoietic growth factor	Drug Substance	HPLC
7	Filgrastim Injection	Haemopoietic growth factor	Drug Product	HPLC
8	Follicle Stimulating Hormone	Treatment of infertility in both men and women	Drug Substance	HPLC
9	Follicle Stimulating Hormone Concentrated Solution	Treatment of infertility in both men and women	Drug Product	HPLC
10	Follicle Stimulating Hormone Injection	Treatment of infertility in both men and women	Drug Product	HPLC
11	Human Insulin	Antidiabetic	Drug Substance	Assay of Insulin
12	Insulin Injection	Antidiabetic	Drug Product	Assay of Insulin
13	Insulin Aspart	Antidiabetic	Drug Substance	HPLC
14	Insulin Aspart Injection	Antidiabetic	Drug Product	HPLC
15	Insulin Lispro	Antidiabetic	Drug Substance	HPLC
16	Insulin Lispro Injection	Antidiabetic	Drug Product	HPLC
17	Biphasic Insulin Aspart Injection	Antidiabetic	Drug Product	HPLC
18	Biphasic Insulin Lispro Injection	Antidiabetic	Drug Product	HPLC
19	Biphasic Isophane Insulin Injection	Antidiabetic	Drug Product	HPLC
20	Isophane Insulin Injection	Antidiabetic	Drug Product	Assay of Insulin
21	Insulin Glargine	Antidiabetic	Drug Substance	AAS
22	Insulin Glargine Injection	Antidiabetic	Drug Product	HPLC
23	Interferon Alfa-2 Concentrated Solution	Anticancer	Drug Substance	HPLC
24	Interferon Alfa-2a Injection	Anticancer	Drug Product	HPLC
25	Interferon Alpha 2b Injection	Anticancer	Drug Product	HPLC
26	Interferon Beta 1a Concentrated Solution	Antiviral-cytokine; antiproliferative and immunomodulatory	Drug Substance	HPLC
27	Interferon Beta-1a Injection	antiproliferative and immunomodulatory	Drug Product	HPLC
28	Pegfilgrastim	Haemopoietic growth factor	Drug Substance	HPLC
29	Recombinant Streptokinase Bulk Solution	Thrombolytic agent	Drug Substance	Flurometry

30	Recombinant Streptokinase for Injection	Thrombolytic agent	Drug Product	Fluorometry
31	Rituximab	Anticancer	Drug Substance	cytotoxicity assay
32	Rituximab Injection	Anticancer	Drug Product	complexo
33	Somatropin	Growth Hormone	Drug Substance	Size-exclusion
34	Somatropin Concentrated Solution	Growth Hormone	Drug Product	Size-exclusion chromatography
35	Somatropin for Injection	Growth Hormone	Drug Product	Size-exclusion chr
36	Teriparatide	Bone forming agent	Drug Substance	HPLC
37	Teriparatide Concentrated Solution	Bone forming agent	Drug Product	HPLC
38	Teriparatide Injection	Bone forming agent	Drug Product	HPLC

**Table-7: CORRELATION OF MONOGRAPHS ON RADIOPHARMACEUTICAL PREPARATION IN I.P-2022 (VOLUME-III)-34 Monographs**

S.NO	NAME OF THE DRUG
1	Fluorodeoxyglucose (18F) Injection
2	Gallium (68Ga) Chloride Solution for Radiolabelling
3	Gallium (67Ga) Citrate Injection
4	Gallium (68Ga)Edotreotide Injection
5	(131I) Meta-Iodobenzyl Guanidine Injection for Diagnostic Use
6	(i3ii) Meta-Iodobenzyl Guanidine Injection for Therapeutic Use
7	Samarium (153Sm) Ethylene Diamine Tetramethylene Phosphonate (EDTMP) Injection
8	Samarium Phosphate (32P) Colloid Injection
9	Sodium Chromate (51Cr) Injection
10	Sodium Fluoride (18F) Injection
11	Sodium Iodide (,I23I) Injection (From ,MXe)
12	Sodium Iodide (I23I) Solution For Radiolabelling
13	Sodium Iodide (131I) Capsules for Diagnostic Use
14	Sodium Iodide (13II) Capsules for Therapeutic Use
15	Sodium Iodide (131I) Solution
16	Sodium Pertechnetate (99mTc) Injection (Fission)
17	Sodium Pertechnetate (99mTc) Injection (Non-fission)
18	Sodium Phosphate (32P) Injection
19	Strontium (89Sr) Chloride Injection
20	Technetium (99mTc) Colloidal Rhenium Sulphide Injection
21	Technetium (99inTc) DMSA Injection
22	Technetium (99,nTc) EC Injection

23	Technetium (99n,Tc) ECD Injection
24	Technetium (99mTc) Exametazime Injection
25	Technetium (99mTc) Glucoheptonate Injection
26	Technetium (Tc) HYMC-TOC Injection
27	Technetium (99nITc) Labelled Human Serum Albumin Nanocolloid Injection
28	Technetium (99mTc) Macrosalb Injection
29	Technetium (99mTc) Mebrofenin Injection
30	Technetium (Tc) Medronate Complex Injection
31	Technetium (99nITc) Mertiatide Injection
32	Technetium (99mTc) MIBI Injection
33	Thallous (201Tl) Chloride Injection^
34	Urea (14C) Capsules

## DISCUSSION

The present compilation provides a structured overview of the Indian Pharmacopoeia (IP) 2022, highlighting the breadth and diversity of its 3,042 monographs. Of these, 2,326 monographs fall within the alphabetical section (A–Z), which was discussed in our previous publication<sup>1</sup>, representing a comprehensive range of pharmaceutical substances. The inclusion of varied categories—such as Vitamins, Minerals, Amino Acids, and Fatty Acids (Table-1); Phytopharmaceuticals (Table-2); Herbal Drugs and Extracts (Table-3); Vaccines and Immunosera (Table-4); Blood and Blood-derived Products (Table-5); Biotechnological Products (Table-6) and Radiopharmaceutical Preparations (Table-7) underscore the multidisciplinary scope of IP 2022.

The compilation of monographs and the corresponding percentage contribution based on Vitamins, Minerals, Amino Acids, and Fatty Acids shows that a total of 117 monographs fall under this category. Among these, 30.77% employ HPLC as the method of analysis, while 8.54% utilize UV spectrophotometry. This group comprises 71 drug substances and 46 drug products.

The compilation of monographs and their percentage contribution based on Phytopharmaceuticals (PPI)—the first set of approved herbal products officially notified by the Pharmacopoeia—shows that seven products have been included in the Indian Pharmacopoeia. All seven monographs correspond to drug substances, and each employ HPLC as the assay method.

The compilation of monographs and the percentage contribution based on Herbs and Herbal Products for human use indicates that this category comprises 164 monographs. Among these, HPLC accounts for 64.97% of the analytical methods, while GC contributes 22.93%,

marking its first significant inclusion in the analysis of drugs in the Indian Pharmacopoeia. Of the 164 monographs, 113 correspond to drug substances and 51 to drug products.

The compilation of monographs and the corresponding percentage contribution based on Biotechnology derived Therapeutic Products shows that a total of 38 Monographs fall under this category. Among this, 68% employed HPLC as method of analysis. This group comprises of 39.47% of drug substances and 60.52% of drug product.

### **CONCLUSION:**

The digitalization of library resources by the Government of India highlights a growing need for well-organized and accessible Pharmacopoeial archives. Despite the availability of physical volumes, earlier editions of the Pharmacopoeia remain scattered and inadequately compiled, limiting their potential value to researchers and professionals.

This review provides a distinctive and systematic compilation of the Indian Pharmacopoeia 2022, focusing on the number and types of monographs, assay methods, pharmaceutical categories, and therapeutic uses. By organizing and presenting this information in a clear and consolidated manner, the work contributes to improved accessibility, supports academic and regulatory reference needs, and reinforces the importance of preserving Pharmacopoeial knowledge in digital form. Ultimately, this compilation serves as a meaningful step toward bridging archival gaps and strengthening the foundation for future research and policy development in the field of pharmaceuticals.

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