

**SHORT COMMUNICATION**

**Ethno-medicines used by Santals & Paharias for treating skin diseases**

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**ABSTRACT**

*Ethno-medicines are being practiced by the local herbal healers known as Pahans, Horopaths, Manjhis, Nayakis and Vidyas of Dumka district in the state Jharkhand, India. These medicinal practitioners are treating number of diseases and disorders including the skin problems using available ethno-medicines of the surrounding forest and hilly areas of the region. The main objective of this paper is to explore and enumerate these highly significant 55 ethno-medicinal plant species used by these people in skin treatment, along with their local names, families, parts used and ethno-medicinal uses. These ethno-medicines may further provide future scope to nutrition, escort bio-molecules for the development of new drugs, further experimentations, explorations and researches for various economic aspects, profiting our society.*

**Keywords :** Ethno-medicines, explorations, traditional-knowledge

**INTRODUCTION**

Tribal populations of Dumka district, mainly the *Santhals* and *Paharias* and some indigenous communities like *Bhumijis*, *Mahalis*, *Kols*, *Napits* and *Kumhars* reside, in the lap of extensive forests, several scattered hillocks, high ridges, valleys and beside rivers. These peoples specially the herbal healers are treating a number of ailments and diseases including the skin diseases by the available ethno-medicines, which they are practicing over generations and have learned verbally, from their ancestors. Ironically, this vital knowledge is inherited verbally, from elders of the society to youngsters, without any basic documentation, experimental assessment and inventory preparations. And along with the gradual modernization, the lives of these communities are getting tough and hence are either migrating to other areas or changing their profession, ultimately, this knowledge is threatened. Hence there is an urgent need to conserve and sustain this traditional knowledge along with these tribal and indigenous people who know pretty well to utilize the bio-resources sustainably without disturbing the ecology.

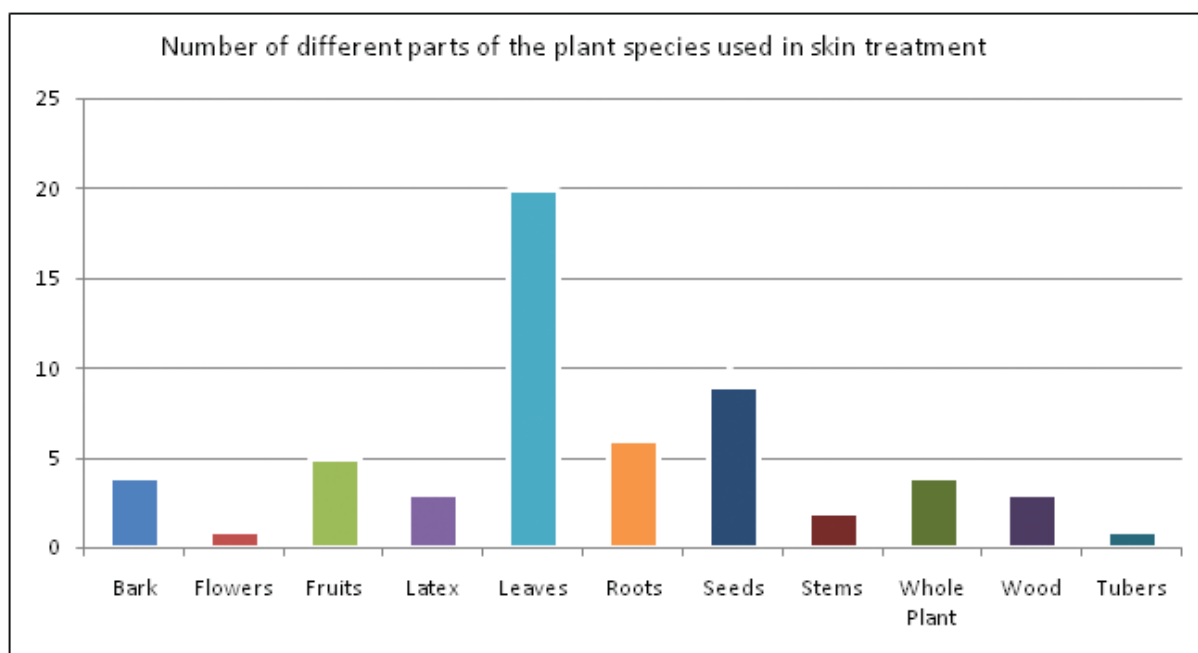
This paper explores and enumerates 55 such ethno-medicinal plant species being utilized by these communities in skin treatment. These further provide scopes for explorations of various

economically important plant species, which are being utilized by these people to meet their primary health and daily requirements.

**MATERIALS AND METHODS**

Thorough and extensive field work was conducted in different randomly selected blocks of the district namely, Kathikund, Shikaripara, Gopikandar, Rangamission, Dumka, Maharo and Jama, since 2018-2020 especially in the months of December to August, to collect most of the species in their flowering and fruiting season. For this very purpose, semi-structured questionnaires were prepared. Ethnic and knowledgeable, herbal medicinal practitioners were interviewed several times. They were interviewed for the type of plants and preparation of the drugs and their doses; they use to cure the patients. Separate interviews were also made with the patients for knowing the degree of cure.

A total of fifty five ethno-medicinal plant species were collected which are being utilized in skin treatment, properly tagged with their local names. Collected plants were processed and herbarium specimens were prepared following standard herbarium techniques (Jain and Rao, 1977) and identified consulting available literatures (Haines, 1921-1925; Kirtikar and Basu, 1935; Anonymous, 1948-1976; Chopra *et al.* 1956; Maheshwari and Singh, 1965 and Jain, 1968).



**Fig. 1: Number of different parts of the plant species used**

**RESULTS AND DISCUSSIONS**

Dumka district has the heritage of extensive phyto-therapy for the treatment of various diseases and promotion of health. Present study reveals a total of fifty- five significant ethno-medicinal plant species being utilized in skin treatment, by the indigenous and tribal herbal practitioners of the study area (Table 1). Number of species and percentage of the plant parts of different plant species used as ethno-medicine in treatment of skin problems has been presented in Table 2 and Figure 1. Plant species along with their local names, families, parts used and ethno-medicinal uses have been presented in the Table 3.

**Table 1: Statistical synopsis of plant species utilized in skin treatment in Dumka**

Groups	Families Number	Genera Number	Species Number
Pteridophyte	01	01	01
Dicotyledons	24	47	47
Monocotyledons	05	07	07
Total	30	55	55

**Table 2: Statistical synopsis of the % of plant parts utilized in skin treatment:**

Sl. No.	Plant Parts	(Actual Value)% Used
01	Bark	(04) 07%
02	Flowers	(01) 02%
03	Fruits	(05) 09%
04	Latex	(03) 05%
05	Leaves	(20) 34%
06	Roots	(06) 10%
07	Seeds	(09) 16%
08	Stems	(02) 03%
09	Tubers	(01) 02%
10	Whole Plant	(04) 07%
11	Wood	(03) 05%

Many of these plant species like, *Adhatoda vasica*, *Aegle marmelos*, *Aloe vera*, *Andrographis paniculata* (Patel et al. 2017), *Aristolochia indica*, *Bauhinia racemosa*, *Calotropis gigantea*, *Cyanodon dactylon* and *Momordica charantia* are also used to cure cough and cold, gastro-intestinal, fevers etc. in addition to skin problems. Some of these like *Aegle marmelos*, *Alocasia macrorrhiza*, *Azardirachta indica*, *Basella alba*, *Bauhinia racemosa*, *Citrus auruntifolia*, *Heliotropium*



**A. Selling Ethno-medicines in Hats**



**B. *Argyreia nervosa***



**C. *Coccinia grandis***



**D. *Cocculu shirsutus***



**E. *Calotropis gigantea***



**F. *Heliotropium indicum***



**G. *Holarrhena pubescens***



**H. *Plumbago zeylanica***



**I. *Tabernaemontana divaricata***

**Table 3: Enumeration of ethno-medicines being used in skin treatment**

Sl.No.	Scientific Name; [Family]; (Voucher- Specimen)	Local name	Parts used	Ethno-medicinal uses
1.	<i>Adenanthera pavonina</i> L.; [Fabaceae]; (AD - 186)	Ranjana, Badi Gumchi (IC), Rakt Chandan (H)	Seeds	The paste of the ground seeds is used twice a day to treat boils and inflammations.
2.	<i>Adhatoda vasica</i> Nees.; [Acanthaceae]; (AD-547)	Basok (S), Vasak (IC), Machraka (P)	Leaves	Poultice of the leaves is applied over fresh wounds, rheumatic joints and inflammatory swellings.
3.	<i>Adiantum capillus-veneris</i> ; [Pteridaceae]; (AD-151).	Gheri-Bandha (S), Hansraj (IC)	Whole plant	Whole plant of about 100-150g is crushed & mixed with about 50ml mustard oil and then applied externally for 5-7 days to cure skin diseases in domestic animals.
4.	<i>Aegle marmelos</i> (L.) Correa; [Rutaceae]; (AD-548)	Bel (IC), Sinjo (S)	Leaves	Extract made from equal number of leaves of Bel & Sinduar ( <i>Vitex negundo</i> L.) is applied topically over the acnes and pimples along with some Karpoor (Camphor).
5.	<i>Ageratum conyzoides</i> L.; [Asteraceae]; (AD-152)	Uchunti (IC), Vishamushti	Leaves	Juice of crushed leaves is applied on wounds & cuts of cattle to check bleeding. The aerial part of the plant is used mainly in leprosy and as bath in ecchymosis in humans too.
6.	<i>Alocasia macrorrhizos</i> (L.) G.Don.; [Araceae]; (AD- 101)	Kanda (S) (IC)	Stems	Extract of freshly cut stems is used on the skin to counter-affect itching caused after touching itchy or stinging plants such as sugar cane.
7.	<i>Aloe vera</i> (L.) Burm. f.; [Asphodelaceae]; (AD - 243)	Gheekuari, Mosobari (S), Kattarvazha (P)	Leaves- pulp	Pulp of leaves is applied over tumours, cysts, inflamed parts and scalds. It is also effective in curing eczema and burns.
8.	<i>Anacardium occidentale</i> L.; [Anacardiaceae]; (AD - 292)	Kaju (H) (IC)	Gums of barks	The gum of the bark is applied twice or thrice a day to cure leprosy, ringworm and ulcers.
9.	<i>Andrographis paniculata</i> (Burm.f.) Nees.; [Acanthaceae]; (AD - 556)	Kalmeg (S), Kalmegh (IC) (H)	Leaves	Leaves ground with turmeric ( <i>Curcuma longa</i> ), is applied over cuts, wounds & skin diseases. Application should be continued till 7-10 days for cuts & wounds & 15-20 days for skin diseases.
10.	<i>Argemone mexicana</i> L.; [Papaveraceae]; (AD-136)	Siyalkanta (IC), Dhamoi, Pilli katail (H)	Roots & Stems	Crushed roots are applied over affected parts to treat eczema in domestic animals.
11.	<i>Argyreia nervosa</i> (Burm. f.) Bojer; [Convolvulaceae]; (AD- 134)	Kedok Arak (S), Bistarak, Vriddhadaruka (IC)	Leaves	Fresh leaves are tied over the boils for quick healing. Paste of the leaves is also applied over the wounds and is effective in rheumatism.

Sl.No.	Scientific Name; [Family]; (Voucher- Specimen)	Local name	Parts used	Ethno-medicinal uses
12.	<i>Aristolochia indica</i> L.; [Aristolochiaceae]; (AD-309 )	Godh (S), Iswarmul (H),	Roots	Pounded roots are rubbed with honey to cure leprosy.
13.	<i>Azadirachta indica</i> A. Juss.; [Meliaceae]; (AD- 112 )	Neem (S) (H) (IC)	Whole plant	Paste of the leaves is applied on the affected part for getting relief from itching caused due to chicken-pox. It is also applied as face pack and other parts of the body to counter-effect the bacterial infections, pimples and rashes to condition the skin.
14.	<i>Azanza lampas</i> (Cav.) Alef.; [Malvaceae]; (AD - 339 )	Bankapasi (H)	Roots & fruits	The roots and fruits are used in the treatment of wounds and sores.
15.	<i>Bambusa arundinacea</i> (Retz.) Willd.; [Poaceae]; (AD- 356)	Bans (H) (IC), Mah (S)	Leaves	Paste of the leaves is applied externally in the treatment of gout, wounds and for suppuration of boils.
16.	<i>Basella alba</i> L.; [Basellaceae]; (AD/SLB- 233)	Poi sag (IC), Porai (S), Pore (P)	Leaves	Pulp of leaves is applied over boils and ulcers to hasten suppuration. Extract of the leaves is mixed along with butter, soothes and cools burns and scalds.
17.	<i>Bauhinia racemosa</i> Lam.; [Fabaceae]; (AD-161)	Sin Arak (S), Koenar, Kachnar (H)	Barks	The decoction of barks is used to wash skin diseases and ulcers externally.
18.	<i>Bombax ceiba</i> L.; [Malvaceae]; (AD/SLB- 328)	Edel (S), Semal (H), Panjamaram (P)	Barks	To cure the patients suffering from small pox, 2 teaspoonfuls of paste of bark is administered orally, at an interval of 2-3 hours. It aids to outburst the small pox.
19.	<i>Buchanania lanzan</i> Spreng.; [Anacardiceae]; (AD/SLB- 569)	Tarop (S), Piyar (H)	Seeds oil	An ointment made of seeds relieves itching, prickly heat, rashes, skin spots, facial blemishes and other skin related problems.
20.	<i>Calotropis gigantea</i> (L.) Dryand.; [Apocynaceae]; (AD- 312)	Madar (H), Akaona (S), Erukku (P)	Leaves	Castor oil ( <i>Ricinus communis</i> ) is placed on the leaves & then warmed. It is applied in warm state over boil, blisters and skin diseases.
21.	<i>Citrus aurantiifolia</i> Swingle.; [Rutaceae]; (AD- 315)	Nimbu, Pati Lebu (IC)	Fruits	Dark marks of the skin on the elbow can be lightened by applying the juice of fruits twice a day regularly. Half a cup of juice of fruits along with 1 spoonful of glycerin in one cup cool, boiled milk, applied twice a day, effectively lessens the dark circles beneath eyes.

Sl.No.	Scientific Name; [Family]; (Voucher- Specimen)	Local name	Parts used	Ethno-medicinal uses
22.	<i>Clitoria ternatea</i> L.; [Fabaceae]; (AD- 302)	Nil Baha (S), Aparajita (IC)	Leaves	Leaves are boiled in Til ( <i>Sesamum indicum</i> L.) oil and applied, twice a day, to cure scabies in winter.
23.	<i>Coccinia grandis</i> (L.) Voigt; [Cucurbitaceae];(AD- 207)	Kundri (H), Tela Kucha (IC)	Leaves	Paste of the leaves is applied in the eruptions of skin.
24.	<i>Cocculus hirsutus</i> (L.) Diels; [Menispermaceae]; (AD- 326)	Patalgarudi (H), Jaljamini (IC)	Leaves	Paste of the leaves is applied to treat eczema.
25.	<i>Cordia dichotoma</i> G. Forst.; [Boraginaceae];(AD- 701)	Lasora, Bahubara(H), (IC), Buch (S)	Kernels	Paste of kernels is used in ringworm for about seven days thrice daily.
26.	<i>Curculigo orchioides</i> Gaertn.; [Hypoxidaceae]; (AD - 255)	Kali Musali (H), Turam (S)	Roots	Paste of roots is applied to hasten wound cure.
27.	<i>Curcuma longa</i> L.; [Zingiberaceae]; (AD- 113)	Haldi (H), Sasan (S)	Rhizomes	Paste of the rhizomes is applied all over the body either solitary or with the leaves of Neem, before bath, it makes the skin glow and also cures a number of skin diseases. Fresh juice along with lime or alum makes it a good dressing for sprains, bruises, wounds etc. (Das, 2014).
28.	<i>Cynodon dactylon</i> (L.) Pers.; [Poaceae]; (AD- 551)	Dub Ghas (H), Dubi Ghas (S)	Whole plants	Plant extract is boiled in four times that of the Ghee and is then applied over the pimples.
29.	<i>Eclipta prostrata</i> (L.) L.; [Asteraceae]; (AD- 217)	Bhangaraiya (H), Bhringraj (IC)	Roots	Paste of roots is applied externally as antiseptic to ulcers and wounds in cattle.
30.	<i>Eupatorium triplinerve</i> M.Vahl.; [Asteraceae]; (AD- 296)	Ayapan(H), (IC)	Leaves	Decoction of boiled leaves is used to wash chronic wounds and deep cuts twice as day, to heal it effectively.
31.	<i>Euphorbia thymifolia</i> L.; [Euphorbiaceae]; (AD- 679)	Chhoti- dudhi, Lal- Dudhiya (IC)	Latex	Latex of the plant is used in ringworm thrice daily.
32.	<i>Heliotropium indicum</i> L.; [Boraginaceae]; (AD- 212)	Hatisur (IC), Hati Sunda (S)	Leaves	Paste of equal part of leaves of the plant along with <i>Wedelia chinensis</i> , <i>Cyanodon dactylon</i> and <i>Eclipta prostrata</i> is applied twice a day over the white scars of the burns to cure it.
33.	<i>Holarrhena pubescens</i> Wall. ex G. Don, [Apocynaceae]; (AD- 165)	Hat Baha (S), Kurchi, Kutaj (IC)	Bark and seeds	Decoction of the bark and seeds is taken internally in the early morning cures wound and boils.
34.	<i>Lantana camara</i> L.; [Verbeaceae];(AD- 624)	Putush (H)	Leaves	Leaves of the plant are used in leprosy, chicken pox, measles, etc.

Sl.No.	Scientific Name; [Family]; (Voucher- Specimen)	Local name	Parts used	Ethno-medicinal uses
35.	<i>Millettia pinnata</i> (L.) Panigrahi; [Fabaceae]; (AD- 166)	Karanj (H), Kurunj (P) leukoderma.	Seeds	Seed oil is used to treat scabies and
36.	<i>Momordica charantia</i> L.; [Cucurbitaceae]; (AD- 107)	Karla, Kanchan arac (S), Karela (H)	Leaves	Two spoonful extract of leaves is taken along with luke warm water in morning in empty stomach to condition skin.
37.	<i>Ocimum tenuiflorum</i> L.; [Lamiaceae]; (AD- 111)	Tulsi (H) (IC), Tursi (S)	Whole plant	Leaves along with some salt and a few drops of lemon juice, is applied twice a day, over the affected parts by ringworms, cures it. Daily use of paste of leaves also conditions the skin.
38.	<i>Plumbago zeylanica</i> L.; [Plumbaginaceae];(AD- 318)	Chitrak (IC), Chitri(P)	Leaves & latex	Leaves of the plant are used externally in leprosy and other skin diseases of obstinate characters. Latex is also used in scabies.
39.	<i>Portulaca oleracea</i> L.; [Portulacaceae]; (AD- 232)	Kulfa	Leaves	The leaves & stems are applied topically in swellings, bruises, abscesses & boils.
40.	<i>Psoralea corylifolia</i> L.; [Fabaceae]; (AD- 705)	Babchi(IC), Bakuchi (H)	Seeds	Seeds of the plant are used in treating leukoderma.
41.	<i>Pueraria tuberosa</i> (Willd.) DC.; [Fabaceae]; (AD- 226)	Tirra da (S) Patal Kohra (IC)	Tubers	Use of tubers regularly in diet, rejuvenates the skin and increases fairness and glow.
42.	<i>Ricinus communis</i> L.; [Euphorbiaceae]; (AD - 390)	Andi, Erand (H), Eradom (S), Elondi (P)	Roots	Paste of barks of roots along with some <i>Curcuma longa</i> rhizomes is applied over the itches and rashes twice a day to cure it.
43.	<i>Santalum album</i> L.; [Santalaceae]; (AD- 129 )	Condon(S) Chandan (IC)	Wood	Paste of wood along with Haldi and Karpoor is applied twice or thrice a day, over the pimples and boils to cure it. It is also applied similarly on the face and body after bath and before going to bed to condition the skin and maintain its natural glow.
44.	<i>Semecarpus anacardium</i> L. f.; [Anacardiaceae]; (AD - 570)	Bhelwa (IC), Soso(S), Bale(P)	Fruits	Red- orange part of the fruits is considered good for various skin diseases.
45.	<i>Senegalia catechu</i> (L.f.) P.J.H. Hurter &Mabb.; [Fabaceae]; (AD - 234)	Khair (S) (IC)	Leaves & wood.	A tincture of the plant is used to treat bed sores and painful mammary glands.

Contd.

46.	<i>Senna alata</i> (L.) Roxb.; [Fabaceae]; (AD- 264)	Dadmari (IC)	Leaves wool"	Leaves are pounded, till "cottony is formed and then applied externally over to cure ringworm.
47.	<i>Shorea robusta</i> Roth; [Dipterocarpaceae]; (AD- 342)	Sal, Sakhua (IC), Sarjom (S), Karimaruthu (P)	Seeds	Oil of the seeds is applied all over the body to condition the skin. And to counter effect itches.
48.	<i>Spondias pinnata</i> (L.f.) Kurz.; [Anacardiaceae]; (AD- 371)	Ambra (S), Amra(IC), Ambaro(P)	Fruits	Ripened fruit's pulp is applied over wounds caused by prolonged water contacts, itches, cold cracks and eczemas.
49.	<i>Tabernaemontana divaricata</i> R.Br. ex Roem. &Schult.; [Apocyanaceae]; (AD - 258)	Tagar (IC), Sada Baha (S)	Wood	It is also applicable similar to <i>Santalum album</i> to cure pimples and acnes.
50.	<i>Tectona grandis</i> L.f.; [Verbenaceae]; (AD - 301 )	Sagwan(H), (IC)	Seeds	Oil of the seeds is applied twice or thrice a day, externally to cure itches.
51.	<i>Terminalia elliptica</i> Willd.; [Combretaceae]; (AD -564)	Ason (IC), Atnak(S)	Barks	Ash of about 2 inches brunt bark mixed with til ( <i>Sesamum indicum</i> L.) oil is applied topically to cure itches.
52.	<i>Trichosanthes dioica</i> Roxb.; [Cucurbitaceae]; (AD - 380)	Patal, Parwal (H), (IC)	Fruits	Painful swellings during cutting of nails with pus can be cured by placing the finger into the grilled (half brunt) fruits, twice or thrice a day.
53.	<i>Triticum aestivum</i> L.; [Poaceae]; (AD - 253)	Genhu (H), Gom(IC)	Seed grains (Cryopsis)	Boiled seeds husk and flour of seeds are applied to clean and condition the dry skin.
54.	<i>Vachellia nilotica</i> (L.) P.J.H. Hurter &Mabb.; [Fabaceae]; (AD - 288)	Babla (S) (IC), Babul (H)	Barks	8-10 g of pounded barks are boiled in water and latter is then use to wash injured mammary glands caused during feeding babies among nursing mothers.
55.	<i>Woodfordia fruticosa</i> (L.) Kurz; [Lythraceae]; (AD - 335)	Dhai (IC), Icak (S)	Flowers	Paste of <i>Dhai</i> flowers and <i>Lodh</i> ( <i>Symplocos racemosa</i> (Roxb.)) bark in equal amount, is applied topically over pimples and acnes to cure it.

\*(S)- Santal Community, \*(P)- Paharia Community, \*\*\*(IC)- Indigenous Communities like Mahalis, Bhumijs, \*\*\*\*(H) Hindietc.

*indicum*, *Momordica charantia*, *Pueraria tuberosa*, *Spondia spinnata* and *Triticum aestivum* are sold in the local markets called as *Haats* or *Hatias* and are used either as vegetables or leafy vegetables which are also main source of earning their livelihood (Das, 2018). Others like *Aegle marmelos*, *Azardirachta indica*, *Calotropis gigantea*, *Citrus × aurantiifolia*, *Clitoria ternatea*, *Curcuma longa*,

*Cyanodon dactylon* and *Ocimum sanctum* do possess religious significance too (Das and Bondya, 2015).

Ethno-medicines or the folk medical claims are considered an important component of traditional knowledge which is being practiced by a handful of herbal healers, older family members and knowledgeable women of the communities. Ethno-



medicines are used either singly or in association with two or more species to prepare the drugs to cure specific diseases of skin and promoting health (Jain and Tarafder, 1970).

## CONCLUSION

Ethno-medicinal plants utilized by these herbal healers can no doubt discover new drugs or escort molecules for the development of new drugs, medicines, provided the formulations and data should have integrated scientific approaches (Mukherjee *et al.*, 2015). At the same time, efforts should be made to recognize Intellectual Property Rights of these ethnic herbal medicinal practitioners, to sustainably utilize their precious knowledge and conserve these for our future generation (Borathakur and Gogoi, 1994). Integrated scientific approaches can meet the emergent future requirement of different significant drugs and medicines.

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