

Review Article

Mā' al-Lahm (meat soup): a narrative review on Unani Pharmacopeial protein formulation dosage form

Mehvash Alvi¹, Tabsheer Jahan^{2*}

¹Department of Ilmul Saidla (Unani Pharmacy), Ayurvedic and Unani Tibbia College and Hospital, University of Delhi, Karol Bagh, New Delhi, India

²Department of Ilmul Saidla (Unani Pharmacy), National Institute of Unani Medicine, Ghaziabad, Uttar Pradesh, India

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*Correspondence:

Dr. Tabsheer Jahan,

E-mail: tabsheer.niumgzb@gmail.com

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ABSTRACT

In the Unani system of medicine, diet is an integral part of the treatment regimen, and dietary recommendations for health promotion have been practiced for ages. Special diets such as *Mā' al-Lahm* (meat soup), *Mā' al-Jubn* (whey), *Mā' al-Asal* (honey water), and *Mā' al-Sha'ir* (barley water), are the essential therapeutic agents in Unani medicine that can effectively and affordably address lifestyle disorders and malnutrition-related diseases. Among these, *Mā' al-Lahm* is a unique Unani Pharmacopeial formulation made with meat and herbal ingredients in the form of soup or distillate. It is a protein-rich liquid dosage form that revitalizes the body by strengthening organs and enhancing physical strength and energy. This natural remedy is used to treat various health issues, including anemia, cardiac weakness, liver and stomach problems, weak immunity, and general debility. *Mā' al-Lahm* combines the health benefits of both meat and medicinal herbs. Meat constitutes high-quality proteins, vitamins, minerals, bioavailable iron, and an assembly of beneficial bioactive compounds such as conjugated linoleic acid, glutathione, creatine, taurine, L-carnitine, carnosine, and bioactive peptides. The medicinal herbs contribute additional bioactive components, including carotenoids, coumarins, flavonoids, lignans, phthalates, plant sterols, polyphenols, saponins, and terpenoids, which offer various positive health effects. Unani medicine may offer much-needed and affordable nutritionally and therapeutically dense choice for consumers. This review article attempts to provide a comprehensive account of *Mā' al-Lahm*, covering its preparation methods, different formulations, therapeutic uses, and the characteristics of different types of meat. Nutritional composition and bioactive constituents of meat are also described to signify the nutritional and medicinal properties of *Mā' al-Lahm*.

Keywords: *Mā' al-Lahm*, *Arq Mā' al-Lahm*, Meat soup, Meat distillate, Unani system of medicine

INTRODUCTION

The study of sickness is as old as civilization, with medical systems developed from the beginning in ancient Mesopotamia, Egypt, China, and India. During the fourth millennium BCE, the people of southern Mesopotamia developed a structured approach to healthcare known as Assyro-Babylonian medicine, marking the emergence of early medical concepts.¹ Later, this emerged in Egypt and was remarkably advanced by the second millennium BCE,

as evidenced by the Papyri. These two ancient traditions preserved folk medicine and shards of prehistoric knowledge in the milieu from which Greco-Roman medicine developed.² Greece is where the Unani system of medicine originated, as the name implies, under the patronage of Hippocrates.³ After him, it was developed and established by Persian and Arab scholars and eventually arrived on the Indian subcontinent in the middle of the fourteenth century.⁴ Since then, it has been flourishing in India and has been included in the healthcare

delivery system by the Indian government because of its scope and widespread usage for healthcare requirements.

The Unani system of medicine is a holistic approach to healthcare that meticulously addresses both health and disease. The system's strength lies in its comprehensive approach, prescription based on temperament, and six essential factors (*asbabe sitta zaruriyah*) of life that are critical for maintaining health.⁵ One of the key components of these essentials is diet. Dietary recommendations for health promotion have long been practiced and are an integral part of the treatment regimen of Unani medicine. Special diets such as *Mā' al-Lahm* (meat soup), *Mā' al-Jubn* (whey), *Mā' al-'Asal* (honey water), *Mā' al-Sha'ir* (barley water), etc., are the principal therapeutic agents that can be used to treat lifestyle disorders and malnutrition-related diseases, including anemia, calcium deficiency and protein deficiency, easily, effectively and economically.⁶

Among these, *Mā' al-Lahm* is a unique Unani Pharmacopeial formulation owing to the presence of high-quality proteins. A vast description of this formulation in Unani classical literature indicates its utmost significance. This natural remedy provides the exceptional benefits of both meat and various herbal-origin drugs. Meat constitutes high-quality proteins, vitamins, minerals, bioavailable iron, and an assembly of beneficial bioactive compounds such as conjugated linoleic acid, glutathione, creatine, taurine, carnosine, and bioactive peptides.⁷ Herbal-origin drugs encompass a multitude of bioactive constituents, including polyphenols, flavonoids, carotenoids, terpenoids, saponins, plant sterols, and lignans, which offer various positive health effects.⁸ This brilliant combination of animal and plant-derived ingredients makes the *Mā' al-Lahm* a nutritionally and therapeutically dense choice for consumers.

METHOD OF PREPARATION

Mā' al-Lahm is a liquid preparation in the form of soup or extract prepared either by boiling or distillation of meat.⁹ When *Mā' al-Lahm* is prepared by the process of simple boiling, it is called '*Yakhni*' (meat soup), and when prepared by the process of distillation, it is referred to as '*Arq Mā' al-Lahm*' (meat distillate).¹⁰ For the preparation of *Mā' al-Lahm*, the meat of a kid of goat is considered best. However, different types of meat can be used according to the patient's disease and temperament, such as the meat of chicken, lamb, pigeon, and different birds.¹¹

Method of preparation of yakhni (meat soup)

There are two methods of preparation for *yakhni*. In the first method, meat, cardamom, coriander, onion and salt according to taste are mixed well in a vessel and water is added to it and boiled over the fire. When the meat becomes soft, remove it from the fire, sieve it, and fry it with ghee. In this manner, *yakhni* is obtained. In the second method, meat and salt according to taste are kept in an oily

container and its mouth is sealed with clay. After that, water is boiled separately in a big vessel. When the water gets boiled well, the sealed container of meat is kept within it and boiled again for 2-3 hours. Then, the container is taken out from the vessel, its mouth is opened and the meat is separated to obtain *yakhni*.¹⁰

Method of preparation of Arq Mā' al-Lahm (meat distillate)

Simple Arq Mā' al-Lahm

Meat is cut into small pieces and boiled in water until the meat becomes soft and the water attains a thick consistency. Then, the *arq* (distillate) is obtained by the process of distillation with the help of *Qar' Anbiq* (Alembic).¹¹

Compound Arq Mā' al-Lahm

Meat and some herbal origin drugs such as *Elletaria cardamomum*, *Foeniculum vulgare*, *Coriandrum sativum*, *Cinnamomum zeylanicum*, *Lavandula stoechas*, *Pistacia lentiscus*, *Rosa damascena*, *Borago officinalis*, *Santalum album*, *Crocus sativus*, etc., are taken according to the need of the patient and mixed with water, and the *arq* (distillate) is obtained by the process of distillation with the help of *Qar' Anbiq* (Alembic).¹¹

Some formulations of *Mā' al-Lahm* mentioned in Unani classical literature are given in Table 1.

CHARACTERISTICS OF DIFFERENT TYPES OF MEAT

Important characteristics of different types of meat used in *Mā' al-Lahm* are given in Table 2 as per Unani classical literature.

NUTRITIONAL COMPOSITION OF MEAT

Meat plays a principal role in supporting and preserving human health. High-quality proteins and a range of lipids, including omega-3 polyunsaturated fatty acids, are abundant in it. It is also rich in essential nutrients such as sodium, potassium, magnesium, iron, selenium, zinc, vitamin A, B-complex vitamins, and folic acid. However, the nutritional and sensory qualities of meat varied significantly depending on factors like the animal's breed, diet, environmental conditions, and slaughter techniques.²² There are various meats, including beef, chicken, mutton, and lamb, that are all nutritionally valuable, with minimal compositional changes. In the human diet, goat meat is considered a healthier option than other types of red meat. It is easier to digest, has lower overall fat and cholesterol levels, and contains fewer saturated fatty acids compared to other forms of meat. Polyunsaturated fatty acids are prevalent in goat meat, which have been linked to a lower risk of coronary heart disease.²³

Table 1: Some formulations of *Mā' al-Lahm* mentioned in the Unani classical literature.

Formulation	Ingredients	Action and uses	Dose
<i>Mā' al-Lahm Sada</i>¹²	<i>Gosht hulwan</i> (goat kid meat) 2.5 kg, <i>Zeera safaid</i> (<i>Cuminum cyminum</i>) 13 g, <i>Kishneez khushk</i> (dry <i>Coriandrum sativum</i>) 40 g, <i>piyaz</i> (<i>Allium cepa</i>) 50 g.	Beneficial to remove weakness developed after removal of morbid matter. Beneficial in post-febrile period	50-120 ml
<i>Mā' al-Lahm Khaas</i>¹³	<i>Leham Buz</i> (goat meat) 10 kg, <i>Mahi ruhu</i> 10 kg, <i>Filfil siyah</i> (<i>Piper nigrum</i>) 30 g, <i>Ilaichi kalan</i> (<i>Amomum subulatum</i>) 175 g, <i>Zeera safaid</i> (<i>Cuminum cyminum</i>) 60 g, <i>Kishneez khushk</i> (dry <i>Coriandrum sativum</i>) 120 g, <i>Qaranfal guldar</i> (dried flower bud of <i>Syzygium aromaticum</i>) 105 g, <i>Sazaj hindi</i> (<i>Cinnamomum tamala</i>) 60 g, <i>Jauzbua</i> (endosperm of dried seeds of <i>Myristica fragrans</i>) 135 g, <i>Bisbasa</i> (dried aril of <i>Myristica fragrans</i>) 85 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 30 g, <i>Tukhme Haloon</i> (seeds of <i>Lepidium sativum</i>) 250 g, <i>Heel khurd</i> (<i>Elletaria cardamomum</i>) 75 g, <i>Maghz Chironji</i> (<i>Buchanania lanzan</i>) 360 g, <i>Daronaj aqrabi</i> (<i>Doronicum hookeri</i>) 250 g, <i>Balchar</i> (<i>Nardostachys jatamansi</i>) 250 g, <i>Taj qalmi</i> (<i>Cinnamomum cassia</i>) 250 g, <i>Zanjabeel</i> (<i>Zingiber officinale</i>) 250 g, <i>Maghz Pambadana</i> (<i>Gossypium herbaceum</i>) 360 g, <i>Behman safaid</i> (<i>Centaurea behen</i>) 250 g, <i>Behman surkh</i> (<i>Salvia haematodes</i>) 250 g, <i>Tudri safaid</i> (<i>Mathiola incana</i>) 250 g, <i>Tudri surkh</i> (<i>Cheiranthus cheiri</i>) 250 g, <i>Khulanjan</i> (<i>Alpinia galanga</i>) 250 g, <i>Talmakhana</i> (<i>Asteracantha longifolia</i>) 250 g, <i>Tukhme Gazar</i> (seeds of <i>Daucus carota</i>) 250 g, <i>Tukhme Piyaz</i> (seeds of <i>Allium cepa</i>) 250 g, <i>Saad Kufti</i> (<i>Cyperus rotundus</i>) 250 g, <i>Nankhwah</i> (<i>Trachyspermum ammi</i>) 250 g, <i>Maweez munaqqa</i> (<i>Vitis vinifera</i>) 2 kg, <i>Anar dana</i> (seeds of <i>Punica granatum</i>) 250 g, <i>Chaal Arjun</i> (bark of <i>Terminalia arjuna</i>) 2.5 kg, <i>Anjeer</i> (<i>Ficus carica</i>) 1 kg, <i>Khurma khushk</i> (dried <i>Phoenix dactylifera</i>) 1 kg, <i>Seb</i> (<i>Malus sylvestris</i>) 5 kg, <i>Adrak sabz</i> (fresh <i>Zingiber officinale</i>) 2 kg, <i>Anar Shireen</i> (<i>Punica granatum</i>) 5 kg, <i>Khajoor taza</i> (fresh <i>Phoenix dactylifera</i>) 5 kg, <i>Zafran</i> (<i>Crocus sativus</i>) 100 g, <i>Arq Heel</i> (<i>Elletaria cardamomum</i> distillate) 750 ml, <i>Sat Loban</i> (dried extract of <i>Styrax benzoin</i>) 75 g, <i>Mahi roobian</i> (<i>Macrobrachium rosenbergii</i>) 1 kg, <i>Sat Salajeet</i> (<i>Asphaltum</i>) 50 g.	<i>Muqawwī-i-Bāh</i> (aphrodisiac), <i>Muqawwī-i-Aam</i> (general tonic), <i>Muqawwī-i-A 'dā'</i> <i>Ra'ṭsa</i> (tonic for vital organs)	60 ml with 6 g <i>Laboob Kabir</i> in the morning
<i>Arq Mā' al-Lahm Ambari ba nuskha Kalan</i>¹⁴	<i>Ushna</i> (<i>Usnea longissima</i>) 10 g, <i>Ood Hindi sa'eda</i> (<i>Aquilaria agallocha</i> powder) 10 g, <i>Ilaichi kalan</i> (<i>Amomum subulatum</i>) 10 g, <i>Burada Sandal surkh</i> (<i>Pterocarpus santalinus</i> powder) 10 g, <i>Burada Sandal safaid</i> (<i>Santalum album</i> powder) 10 g, <i>Badranshboy</i> (<i>Melissa parviflora</i>) 60 g, <i>Badiyan</i> (<i>Foeniculum vulgare</i>) 10 g, <i>Balchar</i> (<i>Nardostachys jatamansi</i>) 50 g, <i>Behman surkh</i> (<i>Salvia haematodes</i>) 10 g, <i>Bisbasa</i> (dried aril of <i>Myristica fragrans</i>) 10 g, <i>Jaiphal</i> (endosperm of dried seeds of <i>Myristica fragrans</i>) 10 g, <i>Chobchini</i> (<i>Smilax china</i>) 70 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 10 g, <i>Zaranbad</i> (<i>Zingiber zerumbet</i>) 10 g, <i>Shaqaqul misri</i> (<i>Pustina secacul</i>) 10 g, <i>Ushba</i> (<i>Smilax aristolochaeifolia</i>) 10 g, <i>Asaroon</i> (<i>Asarum europaeum</i>) 15 g, <i>Qaranfal</i> (<i>Syzygium aromaticum</i>) 10 g, <i>Kabab Chini</i> (<i>Piper cubeba</i>) 10 g, <i>Gule Surkh</i> (<i>Rosa damascena</i>) 60 g, <i>Mastagi</i> (<i>Pistacia lentiscus</i>) 10 g, <i>Gosht Buz</i> (goat meat) 60 g, <i>Gosht Murgh</i> (rooster meat) 600 g, <i>Gosht Kabootar</i> (pigeon meat) 3 numbers, <i>Zafran</i> (<i>Crocus sativus</i>) 4 g, <i>Ambar</i> (<i>Ambra grasea</i>) 4 g.	<i>Muqawwī-i-Qalb</i> (cardiotonic), <i>Muqawwī-i-Dimāgh</i> (brain tonic), <i>Muqawwī-i-Jigar</i> (liver tonic), <i>Muqawwī-i-Bāh</i> (aphrodisiac), <i>Mufarriḥ</i> (exhilarant)	60-90 ml with <i>Sharbat Anar Shireen</i> 25 ml
<i>Mā' al-Lahm Murakkab</i>¹¹	<i>Murgh</i> (rooster meat) 3 numbers, <i>Kabootar</i> (pigeon meat) 9 numbers, <i>Teetar</i> (grey francolin meat) 15 numbers, <i>Bater</i> (quail meat) 15 numbers, <i>Chide</i> (male sparrow) 50 numbers, <i>Zarishk</i>	Beneficial for patients during convalescence,	-

Continued.

Formulation	Ingredients	Action and uses	Dose
	(<i>Berberis aristata</i>) 240 g, <i>Aab Seb</i> (<i>Malus sylvestris</i> juice) 960 ml, <i>Aab Behi</i> (<i>Cydonia oblonga</i> juice) 960 ml, <i>Aab Anar</i> (<i>Punica granatum</i> juice) 960 ml, <i>Aab Nashpati</i> (<i>Pyrus communis</i> juice) 960 ml, <i>Khushk dhaniya</i> (dry <i>Coriandrum sativum</i>), <i>Gule Surkh</i> (<i>Rosa damascena</i>) 36 g, <i>Ustukhuddus</i> (<i>Lavandula stoechas</i>) 36 g, <i>Tukhme Franjmushk</i> (<i>Ocimum basilicum</i> seeds) 36 g, <i>Tukhme Balangu</i> (seeds of <i>Salvia aegyptiaca</i>) 36 g, <i>Abresham muqarraz</i> [cut silk cocoon pieces (spun by larvae of <i>Bombyx mori</i>)] 48 g, <i>Burada Sandal safaid</i> (<i>Santalum album</i> powder) 48 g, <i>Agar</i> (<i>Aquilaria agallocha</i>) 48 g, <i>Post Turanj</i> (peel of <i>Citrus medica</i>) 48 g, <i>Badranjboya</i> (<i>Melissa parviflora</i>) 72 g, <i>Gule Neelofar</i> (<i>Nymphaea alba</i> flower) 72 g, <i>Barge Gaozaban</i> (<i>Borago officinalis</i> leaf) 108 g, <i>Gule Gaozaban</i> (<i>Borago officinalis</i> flower) 108 g, <i>Arq Gulab</i> (<i>Rosa damascena</i> distillate) 960 ml, <i>Arq Bedmushk</i> (<i>Salix caprea</i> distillate) 1 litre 920 ml, <i>Arq Gaozaban</i> (<i>Borago officinalis</i> distillate) 1 litre 920 ml, <i>Arq Neelofer</i> (<i>Nymphaea alba</i> distillate) 1 litre 920 ml, <i>Qaranfal</i> (<i>Syzygium aromaticum</i>) 12 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 12 g, <i>Mushk</i> (<i>Moschus</i>) 9 g, <i>Zafran</i> (<i>Crocus sativus</i>) 9 g, <i>Ambar</i> (<i>Ambra grasea</i>) 5 g, <i>Bansalochan</i> (<i>Bambusa arundinacea</i>) 5 g, <i>Ilaichi khurd</i> (<i>Elletaria cardamomum</i>) 3 g.	<i>Mālankhūliyā</i> (melancholia), <i>Du'fal-Qalb</i> (cardiac weakness)	
Mā' al-Lahm Barid¹¹	<i>Bakri ke bacche ka gosht</i> (goat kid meat) 480 g, <i>bhed ke bacche ka gosht</i> (lamb meat) 480 g, <i>bhed ka gosht</i> (sheep meat) 480 g, <i>murgh ka gosht</i> (rooster meat) 480 g, <i>Arq Gulab</i> (<i>Rosa damascena</i> distillate) 960 ml, <i>Arq Bedmushk</i> (<i>Salix caprea</i> distillate) 960 ml, <i>Arq Gaozaban</i> (<i>Borago officinalis</i> distillate) 960 ml, <i>Arq Gule Gaozaban</i> (<i>Borago officinalis</i> flower distillate) 960 ml, <i>Arq Sandal</i> (<i>Santalum album</i> distillate) 960 ml, <i>Arq Shahtra</i> (<i>Fumaria officinalis</i> distillate) 960 ml, <i>Arq Neelofer</i> (<i>Nymphaea alba</i> distillate) 960 ml, <i>Arq Kasni</i> (<i>Cichorum intibus</i> distillate) 960 ml, <i>Aab Anar</i> (<i>Punica granatum</i> juice) 240 ml, <i>Aab Seb</i> (<i>Malus sylvestris</i> juice) 240 ml, <i>Aab Amrood</i> (<i>Psidium guajava</i> juice) 240 ml, <i>Aab Behi</i> (<i>Cydonia oblonga</i> juice) 240 ml, <i>Aab Loki</i> (<i>Cucurbita moschata</i> juice) 240 ml, <i>Khurfa sabz</i> (fresh <i>Portulaca oleracea</i>) 240 ml, <i>Palak</i> (<i>Spinacia oleracea</i>) 240 g, <i>Zarishk</i> (<i>Berberis aristata</i>) 240 g, <i>Kahu</i> (<i>Lactuca sativa</i>) 240 g, <i>Berge Bed</i> (<i>Salix alba</i> leaf) 240 g, <i>Gule Neelofer</i> (<i>Nymphaea alba</i> flower) 240 g, <i>Shahatra</i> (<i>Fumaria officinalis</i>) 240 g, <i>Tulsi sabz</i> (fresh <i>Ocimum sanctum</i>) 240 g, <i>Gule Seb</i> (<i>Malus sylvestris</i> flower) 240 g, <i>Gule Behi</i> (<i>Cydonia oblonga</i> flower) 240 g, <i>Gule Amrood</i> (<i>Psidium guajava</i> flower) 240 g, <i>Gule Surkh</i> (<i>Rosa damascena</i>) 240 g, <i>Baqila</i> (<i>Vicia faba</i>) 240 g, <i>Amla munaqqa</i> (seedless <i>Emblica officinalis</i>) 240 g, <i>Behman surkh</i> (<i>Salvia haematodes</i>) 22.5 g, <i>Behman safaid</i> (<i>Centaurea behen</i>) 22.5 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 22.5 g, <i>Gule Banafsha</i> (<i>Viola odorata</i> flower) 22.5 g, <i>Dana Ilaichi khurd</i> (seeds of <i>Elletaria cardamomum</i>) 22.5 g, <i>Tukhme Khashkhash</i> (seeds of <i>Papaver somniferum</i>) 22.5 g, <i>Barge Gaozaban</i> (<i>Borago officinalis</i> leaf) 22.5 g, <i>Gule Gaozaban</i> (<i>Borago officinalis</i> flower) 240 g, <i>Post bekhe Gaozaban</i> (root bark of <i>Borago officinalis</i>) 240 g, <i>Badranjboya</i> (<i>Melissa parviflora</i>) 240 g, <i>Ambar</i> (<i>Ambra grasea</i>) 9 g, <i>Mushk</i> (<i>Moschus</i>) 4.5 g.	<i>Waswas Saudawi</i> (insanity due to black bile), <i>Mālankhūliyā</i> (melancholia)	Up to 50 ml
Mā' al-Lahm Haar¹¹	<i>Bhed ke jawan bacche ka gosht</i> (Ram meat) 480 g, <i>teetar ka gosht</i> (grey francolin meat) 480 g, <i>kabootar ke bacche ka gosht</i> (squab meat) 480 g, <i>Murgh ka gosht</i> (rooster meat) 480 g, <i>Tehu ka gosht</i> (hazel grouse meat) 480 g, <i>Chakor ka gosht</i> (partridge meat) 480 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 22.5 g, <i>Ilaichi khurd</i> (<i>Elletaria cardamomum</i>) 22.5 g, <i>Dhaniya khushk</i> (dried <i>Coriandrum sativum</i>) 22.5 g, <i>Qaranfal</i> (<i>Syzygium aromaticum</i>) 22.5 g, <i>Zaranbad</i> (<i>Zingiber zerumbet</i>) 22.5 g, <i>Zeera kirmani</i>	<i>Mālankhūliyā barida</i>	25-50 ml

Continued.

Formulation	Ingredients	Action and uses	Dose
	(<i>Carum carvi</i>) 22.5 g, <i>Sa'tar</i> (<i>Zataria multiflora</i>) 22.5 g, <i>Arq Gulab</i> (<i>Rosa damascena</i> distillate) 1 litre 920 ml, <i>Arq Gaozaban</i> (<i>Borago officinalis</i> distillate) 1 litre 920 ml, <i>Arq Badranjboya</i> (<i>Melissa parviflora</i> distillate) 1 litre 920 ml, <i>Arq faranjmushk</i> (<i>Ocimum basilicum</i> distillate) 1 litre 920 ml, <i>Arq Darchini</i> (<i>Cinnamomum zeylanicum</i> distillate) 960 ml, <i>Arq Ilaichi khurd</i> (<i>Elletaria cardamomum</i> distillate) 960 ml, <i>Arq Sa'tar</i> (<i>Zataria multiflora</i> distillate) 960 ml, <i>Arq Ajwain</i> (<i>Trachyspermum ammi</i> distillate) 960 ml, <i>Arq Bedmushk</i> (<i>Salix caprea</i> distillate) 960 ml, <i>Abresham muqarraraz</i> [cut silk cocoon pieces (spun by larvae of <i>Bombyx mori</i>)] 67.5 g, <i>Ustukhuddus</i> (<i>Lavandula stoechas</i>) 45 g, <i>Faranjmushk</i> (<i>Ocimum basilicum</i>) 45 g, <i>Anisoon</i> (<i>Pimpinella anisum</i>) 45 g, <i>Badranjboya</i> (<i>Melissa parviflora</i>) 45 g, <i>Behman safaid</i> (<i>Centaurea behen</i>) 45 g, <i>Behman surkh</i> (<i>Salvia haematodes</i>) 45 g, <i>Gule surkh</i> (<i>Rosa damascena</i>) 45 g, <i>Gaozaban</i> (<i>Borago officinalis</i>) 45 g, <i>Gule Gaozaban</i> (<i>Borago officinalis</i> flower) 45 g, <i>Post bekhe</i> <i>Gaozaban</i> (bark of <i>Borago officinalis</i> root) 45 g, <i>Jaiphal</i> (endosperm of dried seeds of <i>Myristica fragrans</i>) 13.5 g, <i>Bisbasa</i> (dried aril of <i>Myristica fragrans</i>) 13.5 g, <i>Irsa</i> (<i>Iris ensata</i>) 13.5 g, <i>Zarawand mudaharraaj</i> (<i>Aristolochia longa</i>) 13.5 g, <i>Kaifal</i> (<i>Myrica nagi</i>) 4.5 g, <i>Taj</i> (<i>Cinnamomum cassia</i>) 4.5 g, <i>Balchar</i> (<i>Nardostachys jatamansi</i>) 4.5 g, <i>Bisfaij</i> (<i>Polypodium vulgare</i>) 4.5 g, <i>Daronaj aqrabi</i> (<i>Doronicum hookeri</i>) 4.5 g, <i>Zarnab</i> (<i>Flacourtia cataphracta</i>) 4.5 g, <i>Nagkesar</i> (<i>Mesua ferrea</i>) 4.5 g, <i>Ambar ashhab</i> (<i>Ambra grasea</i>) 9 g, <i>Zafran</i> (<i>Crocus sativus</i>) 9 g, <i>Mastagi</i> (<i>Pistacia lentiscus</i>) 9 g, <i>Mushk</i> (<i>Moschus</i>) 4.5 g.		
Mā' al-Lahm barai Ra'sha wa Zofe Mizaj¹²	<i>Gosht buz</i> (goat meat) 10 kg, <i>Ilaichi safed</i> (<i>Elletaria cardamomum</i>) 75 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 40 g, <i>Qaranfal</i> (<i>Syzygium aromaticum</i>) 40 g, <i>Ajwain</i> (<i>Trachyspermum ammi</i>) 75 g, <i>Zafran</i> (<i>Crocus sativus</i>) 13 g, <i>Arq Gulab</i> (<i>Rosa damascena</i> distillate) 5 litre, <i>Ambar ashhab</i> (<i>Ambra grasea</i>) 3 g.	<i>Ra'sha</i> (tremor)	125 ml
Mā' al-Lahm Alwi Khan¹²	<i>Gosht hulwan</i> (goat kid meat) 5 kg, <i>Murgh jawan</i> (rooster meat) 1 number, <i>Teetar</i> (grey francolin meat) 7 numbers, <i>Kishneez khushk</i> (dry <i>Coriandrum sativum</i>) 40 g, <i>Amla</i> (<i>Emblica officinalis</i>) 40 g, <i>Sazaj hindi</i> (<i>Cinnamomum tamala</i>) 40 g, <i>Podina</i> (<i>Mentha arvensis</i>) 40 g, <i>Gule Seoti</i> (<i>Passiflora caerulea</i>) 62 g, <i>Gulab</i> (<i>Rosa damascena</i>) 62 g, <i>Tukhme Kahu</i> (<i>Lactuca sativa</i> seed) 50 g, <i>Gule Banafsha</i> (<i>Viola odorata</i> flower) 50 g, <i>Gule Neelofer</i> (<i>Nymphaea alba</i> flower) 50 g, <i>Gaozaban</i> (<i>Borago officinalis</i>) 120 g, <i>Gule Gaozaban</i> (<i>Borago officinalis</i> flower) 120 g, <i>Khas</i> (<i>Vetiveria zizanioides</i>) 120 g, <i>Barge Bed sada</i> (<i>Salix alba</i> leaf) 62 g, <i>Barge kishneez sabz</i> (<i>Coriandrum sativum</i> leaf) 62 g, <i>Barge Mako sabz</i> (<i>Solanum nigrum</i> leaf) 62 g, <i>Khaksi</i> (<i>Sisymbrium altissimum</i>) 62 g, <i>Bansalochan</i> (<i>Bambusa arundinacea</i>) 62 g, <i>Arq Sandal sada</i> (<i>Santalum album</i> distillate) 1 litre, <i>Aab Seb</i> (<i>Malus sylvestris</i> juice) 1litre, potable water 1 litre, <i>Ganne ka ras</i> (<i>Saccharum officinarum</i> juice) 1 litre, <i>Kafoor</i> (<i>Cinnamomum camphora</i>) 3 g.	<i>Hararte Qalb</i> , <i>Jigar wa Riya</i>	-
Arq Mā' al-Lahm Chobchini vala¹⁵	<i>Chobchini</i> (<i>Smilax china</i>) 264 g, <i>Gule Gaozaban</i> (<i>Borago officinalis</i> flower) 24 g, <i>Badranjboya</i> (<i>Melissa parviflora</i>) 24 g, <i>Sumbul-ut-teeb</i> (<i>Nardostachys jatamansi</i>) 24 g, <i>Qaranfal</i> (<i>Syzygium aromaticum</i>) 9 g, <i>Darchini</i> (<i>Cinnamomum zeylanicum</i>) 9 g, <i>Ilaichi kalan</i> (<i>Amomum subulatum</i>) 9 g, <i>Jaiphal</i> (endosperm of dried seeds of <i>Myristica fragrans</i>) 9 g, <i>Jawitri</i> (dried aril of <i>Myristica fragrans</i>) 9 g, <i>Badiyan</i> (<i>Foeniculum vulgare</i>) 18 g, <i>Behman surkh</i> (<i>Salvia haematodes</i>) 9 g, <i>Behman safed</i> (<i>Centaurea behen</i>) 9 g, <i>Ushba</i> (<i>Smilax aristolochiifolia</i>) 9 g, <i>Sandal surkh</i> (<i>Pterocarpus santalinus</i>) 9 g, <i>Sandal safed</i> (<i>Santalum album</i>) 9 g, <i>Zafran</i> (<i>Crocus sativus</i>) 9 g, <i>Kabab chini</i> (<i>Piper cubeba</i>) 9 g, <i>Charela</i> (<i>Parmelia perlata</i>) 9 g, <i>Gule surkh</i> (<i>Rosa damascena</i>) 9 g,	<i>Muqawwi-i-Bāh</i> (aphrodisiac), <i>Muqawwi-i-A 'dā'</i> <i>Ra'tsa</i> (tonic for vital organs), <i>Muqawwi-i-Kulya wa Mathāna</i> (tonic for kidneys and bladder), <i>Muḥallil Riyah</i> (carminative), beneficial in	60-84 ml with <i>Sharbat Unnab</i> 24 ml or with <i>Dawa-ul-misk</i> 5 g

Continued.

Formulation	Ingredients	Action and uses	Dose
	Zaranbad (<i>Zingiber zerumbet</i>) 9 g, Taj (<i>Cinnamomum cassia</i>) 9 g, Shaqaqul (<i>Pustina secacul</i>) 9 g, Faranjmushk (<i>Ocimum basilicum</i>) 9 g, Tukhme Hilyoon (seeds of <i>Asparagus officinalis</i>) 9 g, Ood gharqi (<i>Paeonia officinalis</i>) 9 g, Buzidan (<i>Orchis latifolia</i>) 9 g, Ambar (<i>Ambra grasea</i>) 2 g, Mushk (<i>Moschus</i>) 2 g, Mastagi (<i>Pistacia lentiscus</i>) 2 g, Gosht bhed (sheep meat) 1 kg 680 g, Gosht murgh (rooster meat) 1 kg 680 g, Gosht Kabootar jungli (wild pigeon meat) 1 kg 680 g, Arq Badranjboya (<i>Melissa parviflora</i> distillate) 3 litre 840 ml, Arq Bedmushk (<i>Salix caprea</i> distillate) 3 litre 840 ml, Arq Gulab (<i>Rosa damascena</i> distillate) 3 litre 840 ml, Arq Gaozaban (<i>Borago officinalis</i> distillate) 3 litre 840 ml, Arq Bahar 3 litre 840 ml, potable water 4 litre 800 ml.	phlegmatic and melancholic disorders as well in joint diseases, beneficial in chronic catarrh, beneficial in syphilis and diseases caused by an imbalance of black bile	
Arq Mā' al-Lahm Mako Kasni vala¹⁵	Branjasif (<i>Artemisia vulgaris</i>) 120 g, Badawrad (<i>Fagonia arabica</i>) 120 g, Badranjboya (<i>Melissa parviflora</i>) 120 g, Badiyan neemkofta (crushed <i>Foeniculum vulgare</i>) 120 g, Maweez munaqqa (seedless <i>Vitis vinifera</i>) 120 g, Bekhe Kibr (<i>Capparis spinosa</i> root) 120 g, Bekhe Izkhar (<i>Cymbopogon schoenanthus</i> root) 120 g, Aslus soos (<i>Glycyrrhiza glabra</i>) 120 g, Gilo sabz (fresh <i>Tinospora cordifolia</i>) 120 g, Mako (<i>Solanum nigrum</i>) 120 g, Gaozaban (<i>Borago officinalis</i>) 60 g, Gule Gaozaban (<i>Borago officinalis</i> flower) 60 g, Aab barge Kasni sabz (fresh juice of <i>Cichorum intibus</i> leaves) 1 litre 920 ml, Aab barge Gilo sabz (fresh juice of <i>Tinospora cordifolia</i> leaves) 1 litre 920 ml, Gosht hulwan (goat kid meat) 1 kg 920 g, potable water 19 litre 200 ml.	Muhallil auram shikam (anti-inflammatory to visceral inflammations), Muqawwi-i-Mi'da (stomachic)	120 ml

Table 2: Characteristics of different types of meat.

Type of meat	Temperament	Characteristics	Adverse effect	Corrective
Goat meat^{16,17}	Hot and moist but colder than all other types of meat	Goat meat without fat produces fewer waste products and is rich in nutrition. Goat meat with fat produces more waste products and has less nutritional value. Goat meat is beneficial for weak patients.	Produces obstruction, harmful for people of cold and melancholic temperament, and long-term consumption produces black bile	Almond, hot spices, coconut and dry dates
Goat kid meat¹⁶⁻¹⁹	Moderate	Nutritious, the meat of a one-year-old goat kid is considered best and highly nutritious, and meat of a 40-day-old goat kid is very beneficial for the geriatric age group.	-	-
Lamb meat^{16,20}	Moderate, hot and moist in 2-degree	Meat of one-year-old lamb is considered better as it is closer to moderation, meat of sheep younger than one year produces phlegm, while the meat of sheep older than one year has less nutritional value.	Produces flatulence	Hot spices
Rooster meat^{16,17,18,21}	Hen: hot and moist, Rooster: less hot than hen meat	Produces good chime, easily digestible, soup provides moderation in temperament. For this reason, it is given to patients with leprosy, beneficial for weak, lean and thin people, enhances the production of semen, beneficial in bilious fevers, asthma, tremors, and paralysis.	Consumption with milk or curd produces colitis, continuous intake can cause haemorrhoids, gout and loss of libido	Hot spices, Sikanjabeen (oxymel)
Pigeon meat^{16,21}	Hot and dry in 2-degree	Less easily digestible than the meat of wild pigeons, produces good chyme, beneficial for patients of paralysis,	Harmful for people of hot temperament	Vinegar, coriander

Continued.

Type of meat	Temperament	Characteristics	Adverse effect	Corrective
		facial palsy, tremors and ascites, general tonic.		
Grey francolin meat ^{16,17}	Hot-dry in 1-degree	One of the best meats among birds, produces less waste products and has more nutritional value, and easily digestible. According to Ibn Sīnā, Francolin meat is better than Partridge and quail meat, boosts memory and is beneficial in dementia, increases the production of semen, beneficial in cough, diarrhea and ascites, general body tonic, and stomachic.	Harmful for people of hot temperament	Sour items
Partridge meat ^{16,17}	Hot-dry in 2-degree	Prevents diarrhea, beneficial for patients with ascites, paralysis and epilepsy, aphrodisiac in action, easily digestible, and produces good chyme	Harmful for people of hot temperament	<i>Sikanjabeen</i> (oxymel), sour items
Quail meat ^{16,18,21}	Moderate or somewhat hot	Produces good chyme, beneficial for patients during convalescence, lithotriptic, diuretic, and appetizer in action, and produces blood in large quantities.	Harmful for people of hot temperament, excessive intake can cause headaches, consuming very frequently can lead to spasm or tetanus	Drinking pomegranate and grape juices, cooking meat in almond oil, sesame oil, and clarified butter
Hazel grouse meat ^{16,20}	Hot-dry	Easily digestible and thin blood-producing (<i>ghizae lateef</i>), aphrodisiac, and improves memory	-	-

Proteins

One of the most important dietary variables for maintaining independence is consuming enough protein, primarily to prevent frailty, later-life comorbidities, and loss of muscle mass and strength.²⁴ Meat is a treasure of high-quality proteins. On average, it contains about 22% protein, though this can vary from 12.3% in duck meat to 34.5% in chicken breast. The quality of meat protein is largely determined by the presence of amino acids, and it is particularly noted for its rich content of essential amino acids.²⁵ Meat contains all eight essential amino acids, including lysine, methionine, phenylalanine, threonine, tryptophan, valine, leucine, and isoleucine, which the body cannot produce on its own.

Fat and fatty acids

The most variable macronutrient in meat is fat. Lean meat (muscle tissue isolated from surrounding fat) from red meats generally contains more fat than poultry. For example, sheep meat has a fat content of around 8%, considerably more than lean chicken meat, which contains about 2.1% fat and can be classified as low-fat.²⁷ The primary fatty acids found in red meat include palmitic, myristic and stearic acids among the saturated fatty acids; oleic and palmitoleic acids among the monounsaturated fatty acids; and linolenic, arachidonic, and linoleic acids in the polyunsaturated fatty acids group.²⁸

Fat in meat can be found in several forms: intermuscular, intramuscular, and subcutaneous fat. Regardless of its location, whether in muscle or adipose tissue, fat plays a vital role in determining meat quality and significantly contributes to its nutritional value.²⁹ Conjugated linoleic acids, naturally present in lamb, beef, and goat meat, have been shown to positively influence cancer prevention, immune function, and bone health.³⁰ Omega-3 fatty acids, a type of polyunsaturated fat, receive particular attention due to their protective effects on overall human health, especially in reducing the risk of cardiovascular diseases.²²

Vitamins and minerals

Micronutrients, which are vitamins and minerals, have many health benefits, such as supporting tissue health, promoting the formation of bones and teeth, acting as cofactors and coenzymes to various enzyme systems, assisting in the regulation and coordination of the majority of bodily functions, and supporting other physiological and biochemical processes.³¹ A variety of vitamins and minerals may be found in abundance in meat. A 100-gram serving of red meat supplies approximately 25% of the recommended daily intake for vitamins B2, B3, B6, and pantothenic acid, and nearly two-thirds of the daily requirement for vitamin B12.²⁵ All types of meat are excellent sources of niacin. Lamb serves as a source of pantothenic acid, while beef provides an adequate quantity of pyridoxine. Both beef and lamb are good sources of

vitamin B12. Additionally, calf and chicken liver comprise nearly all B vitamins, with the exception of vitamin B9. Lean meat does not include large quantities of other vitamins, including A, C, D, and E, but the liver has very high concentrations of vitamin A.²⁷

BIOACTIVE COMPOUNDS OF MEAT

Conjugated linoleic acid

A group of geometric and positional isomers of linoleic acid make up conjugated linoleic acid (CLA).³² Ruminant animals, including sheep, goats, and cattle, produce CLA in their rumen through microbial conversion of unsaturated fatty acids found in forage, like linoleic acid and oleic acid.³⁰ Beef and lamb typically contain more than 1 mg of CLA per gram of fat, whereas poultry and horse meat generally have less than 1 mg of CLA per gram of fat.³³ In addition to its initial identification as an anticancer compound, CLA has been found to help prevent atherosclerosis, decrease body fat while enhancing lean muscle mass, and influence bone health, immune and inflammatory responses. However, side effects involving liver and intestines have also been shown in some studies by CLA supplements.³⁴

Glutathione

The tripeptide glutathione is made up of three amino acids: glycine, glutamic acid, and cysteine.³⁵ Red meat, such as beef, contains about 12–26 mg of glutathione per 100 grams, with most meats having twice as much glutathione as poultry and up to ten times that of fish.²⁶ Glutathione is a strong antioxidant that is essential for preserving cellular integrity and halting free radical-induced oxidative damage.³⁵ Redox equilibrium, metabolic detoxification, immune system regulation, and oxidative stress depletion are all significantly impacted by it. Low or inadequate glutathione levels have been associated with a number of chronic, age-related diseases, including those involving neurodegeneration, mitochondrial malfunction, and hepatic, cardiovascular, renal, metabolic, and autoimmune disorders.^{36,37}

Creatine

Creatine is a naturally occurring nitrogen molecule present in animal tissues. Red meat and seafood consumption can contribute around 1-2 grams of creatine each day. The primary physiological function of creatine appears to be related to its involvement in energy generation and keeping the skeletal muscles' intracellular adenosine triphosphate (ATP) concentration at a suitable level during vigorous contractions.³⁸ Creatine supplementation has been shown to reduce blood cholesterol, liver fat buildup, and homocysteine, hence minimizing the risk of cardiovascular disease. It boosts muscle growth and strength, inhibits the progression of some types of cancer, improves glycemic management, and has antioxidant properties.³⁹ Creatine has also been reported to exhibit

neuroprotective effects, such as helping to improve cognitive function and memory, and reducing neuromuscular fatigue in elderly people.⁴⁰

Taurine

A unique sulfur-containing β -amino acid found in human tissues, including, retina, brain, and muscles, is taurine. It is prevalent in many meals, but especially in meat, seafood, and poultry.⁴¹ The taurine content of various meats varies significantly. Concentrations in beef and lamb are quite similar, with 43 mg/100 g and 47 mg/100 g, respectively, while the levels are considerably greater in turkey and marine creatures such as mussels, with amounts of 932 mg/100 g and 655 mg/100 g, respectively.⁴² Taurine has numerous imperative effects like membrane stability, osmoregulation, detoxification, and cellular homeostasis. It helps to control blood pressure through the modulation of nitric oxide levels, which lower blood pressure by dilating blood vessels. It also shields the body from oxidative damage.⁴³ It functions as a neurotransmitter and can augment brain development. Also, it helps the liver to convert bile acids into bile salts, which aid in the intestinal absorption of dietary lipids and the removal of cholesterol in bile through feces.⁴⁴ By improving the activities of monocytes, macrophages, and other immune system cells, dietary taurine helps the body's fight against infection and assists in curing bone-related problems, neurological diseases, and obesity.⁴²

L-Carnitine

The skeletal muscle of many mammals contains L-carnitine. Different meats have been shown to have varying amounts of L-carnitine. For example, 100 g of minced beef has 87.5 mg, beef steak has 65.0 mg, lamb chop has 40.5 mg, and skinless chicken breast has 10.4 mg.⁷ Numerous neurological conditions, such as Parkinson's disease, Alzheimer's disease, hepatic encephalopathy, autism spectrum disorder, and other excruciating neuropathies, may be treated with carnitine. It has been demonstrated that using L-carnitine supplements can reduce fatty liver, lower blood lipid concentrations, and treat obesity brought on by a high-fat diet.⁴⁵ By preserving effective energy synthesis and lowering free radical stress, L-carnitine can improve the heart muscle's structural integrity and contractile function.⁴⁶

Other bioactive components

Carnosine, anserine, α -lipoic acid, omega-3 polyunsaturated fatty acid, coenzyme Q10, and bioactive peptides are some other meat-based bioactive compounds known for their positive health effects.^{7,38}

DISCUSSION

Mā' al-Laḥm is a nutritious Unani formulation that strengthens the vital organs of the body, viz, liver, brain,

and heart. It boosts immunity, helps in blood production, and acts as a potent antidote for all sorts of physical weakness of the body.¹¹ It is used to treat various health issues, including anemia, cardiac weakness, liver and stomach problems, weak immunity, and general debility. According to need of patient, Unani scholars prescribed different types of *Mā' al-Lahm*, consisting of different types of meat and herbal ingredients. A variety of animal and bird meat, like goat meat, goat kid meat, lamb meat, rooster meat, partridge meat, pigeon meat, fish meat, etc., are used in *Mā' al-Lahm* for their nutritional and medicinal benefits. Proteins, lipids, vitamins, and minerals, particularly iron, found in meat fulfil the nutritional demand, aid in cognitive functions, supply energy, and are necessary for tissue growth, development, maintenance, and repair.⁴⁷ In addition to high value nutrients, principal bioactive compounds of meat proved a host of health benefits which are linked to their ability to reduce blood cholesterol levels, lower blood pressure, mitigate inflammation, have antibacterial activity, modulate the immune system, guard the human body from free radical damage, and many more.³⁸

Various drugs like *Elletaria cardamomum*, *Foeniculum vulgare*, *Coriandrum sativum*, *Lavandula stoechas*, *Rosa damascena*, *Borago officinalis*, *Santalum album*, *Crocus sativus*, and *Glycyrrhiza glabra*, are added to *Mā' al-Lahm* to enhance its potency and for other purposes. The potential of *F. vulgare* to possess antioxidant, antifungal, antimicrobial, antithrombotic, and hepatoprotective activities has been revealed by various studies, supporting the reasoning behind several of its medicinal uses.⁴⁸ Numerous phytochemicals found in *C. sativus*, including crocin, picrocrocin, and carotenoids, are thought to have significant health benefits, including reducing anxiety and depression, enhancing memory, neutralizing free radicals, regulating immunity, and offering protection against cancer, cardiovascular, respiratory, and hepatic disorders.⁴⁹ *Glycyrrhiza glabra* has shown antibacterial, anti-inflammatory, gastroprotective, immunomodulatory, and antioxidant properties in various studies.⁵⁰ Recent research has demonstrated that *Rosa damascena* possesses neuroprotective and memory-enhancing properties, which can help with memory-related conditions like dementia. By decreasing lipid peroxidation and increasing antioxidants in the cerebral cortex, it demonstrates antidepressant action.⁵¹ A few juices like apple juice, pomegranate juice, and guava juice, are added to augment the benefits of *Mā' al-Lahm*. Intake of apple juice is associated with a favourable impact on various cardiovascular disease risk markers.⁵² According to a comprehensive analysis of clinical trials, pomegranate juices and extracts are the most promising when it comes to improving blood pressure.⁵³ In an experimental study, guava juice consumption augments the hemoglobin concentrations in adolescent girls.⁵⁴ These findings collectively support the traditional use of meat and various herbal ingredients in *Mā' al-Lahm* for both its nutritional and therapeutic properties.

CONCLUSION

Since ancient times, people have consumed meat and animal products for therapeutic and nutritional purposes. In contemporary civilization, this is still a prevalent way of life and typically a necessary part of a healthy diet. *Mā' al-Lahm* is such a unique formulation prepared with meat and some plant-origin drugs which shows the visionary and scientific approach of Unani medicine. It is a treasure of the Unani system of medicine that can be utilized by all age groups as a safe and effective dietary alternative for maintaining a quality life. The review of meat composition signifies its nutritional as well as important medicinal properties. Scientific research serves to bridge the gap between ancient wisdom and modern understanding. It enables a more evidence-based approach to traditional medicine and makes such remedies accessible to a broader audience. The growing body of evidence on the medicinal benefits of meat also provides an avenue for *Mā' al-Lahm* to be more widely accepted in modern therapeutic practices.

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REFERENCES

- Islam A. Origin and development of Unani Medicine: An analytical study. *Intellectual Discourse*. 2018;26:23-49.
- Ahmad A, Naqvi SB, Sultana N. Exploring the Roots: The Historical Journey and Evolution of the Unani System of Medicine. *J Emerg Technol Innov Res*. 2024;11:432-42.
- Kumari P. The impact of ancient Greek medicine in India: the birth of Unani medicine. *Int J Prof Stud*. 2020;10:59-66.
- Parveen A, Parveen R, Akhatar A, Parveen B, Siddiqui KM, Iqbal M. Concepts and Quality Considerations in Unani System of Medicine. *J AOAC Int*. 2020;103(3):609-33.
- Itrat M. Research in Unani medicine: Challenges and way forward. *Altern Integr Med*. 2016;5:1-4.
- Medium.com. Health enrichment for children-Right recipe from Unani medicine. 2018. Available at: <https://medium.com/@ccrum.socialmedia/health-enrichment-for-children-right-recipe-from-unani-medicine-9cee8ab5f430>. Accessed on 12 May 2025.
- Jairath G, Biswas AK, Mal G, Suman SP, Suman SP. Bioactive compounds in meat: Their roles in modulating palatability and nutritional value. *Meat Muscle Biol*. 2024;8:1-15.
- Jain S, Purohit A, Nema P, Vishwakarma H, Jain PK. A brief review on nutraceuticals and its application. *Asian J Dent Health Sci*. 2022;2:7-13.
- Standard Unani Medical Terminology. New Delhi: CCRUM. 2012. Available at: <https://ccrum.res.in/writereaddata/UploadFile/Standard%20Unani%20M>

- edical%20Terminology_1430.pdf. Accessed on 12 may 2025.
10. Kabiruddin M. Bayaz-e-kabir. 2nd edition. Volume 3. New Delhi: Idara Kitabul Shifa. 2012;113.
11. Kabiruddin H. Al-Qarabadeen. 2nd edition. New Delhi: CCRUM. 2006;1024-35.
12. Ghani N. Qarabadeen Najmul Ghani. New Delhi: Idara Kitabul Shifa. 2019;905-15.
13. Government of India. Ministry of Health & Family Welfare. Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (Ayush) New Delhi. National Formulary of Unani Medicine. Part 6. New Delhi: CCRUM. 2011;119.
14. Qarabadeen Majeedi. New Delhi: All India Unani Tibbi Conference. 1986;251-2.
15. Kabiruddin M. Bayaz-e-kabir. 2nd edition. Volume 2. New Delhi: Idara Kitabul Shifa. 2012;141-4.
16. Ghani N. Khazain-ul-advia. 3rd edition. Volume 1 and 2. New Delhi: Idara Kitabul Shifa. 2011;343-80.
17. Baghdadi IH. Kitab al-Mukhtarat fit Tib. 1st edition. Part 1. CCRUM, translator. New Delhi: Central Council for Research in Unani Medicine. 2005;223-4.
18. Zuhr I. Kitab al Aghzia. 1st edition. CCRUM, translator. New Delhi: Central Council for Research in Unani Medicine. 2009;24-31.
19. Tabari R. Firdousul Hikmat. New Delhi: Idara Kitabul Shifa. 2010;349.
20. Nafees B. Kulliyat-e-Nafeesi. Part 1. New Delhi: Idara Kitabul Shifa. 1954;378.
21. Rushd I. Kitab al-Kulliyat. 2nd edition. CCRUM, translator. New Delhi: CCRUM. 1987;248-9.
22. Ahmad RS, Imran A, Hussain MB. Nutritional Composition of Meat. Meat Science and Nutrition. InTech. 2018. Available at: <http://dx.doi.org/10.5772/intechopen.77045>. Accessed on 12 May 2025.
23. Mazhangara IR, Chivandi E, Mupangwa JF, Muchenje V. The potential of goat meat in the red meat industry. Sustainability. 2019;11(13):3671.
24. Lonnie M, Hooker E, Brunstrom JM, Corfe BM, Green MA, Watson AW, et al. Protein for Life: Review of Optimal Protein Intake, Sustainable Dietary Sources and the Effect on Appetite in Ageing Adults. Nutrients 2018;10:360.
25. Pereira PM, Vicente AF. Meat nutritional composition and nutritive role in the human diet. Meat Sci. 2013;93:586-92.
26. Williams P. Nutritional composition of red meat. Nutr Diet. 2007;64:S113-9.
27. Wood J. Meat composition and nutritional value. In: Toldra F, editors. Lawrie's Meat Science. 8th edition. Woodhead Publishing Limited, Duxford, UK. 2017;635-59.
28. Dinh TT, To KV, Schilling MW. Fatty Acid Composition of Meat Animals as Flavor Precursors. Meat Muscle Biol. 2021;5(1):34-6.
29. Geletu US, Usmael MA, Mummed YY, Ibrahim AM. Quality of cattle meat and its compositional constituents. Vet Med Int. 2021;2021(1):7340495.
30. Benjamin S, Spener F. Conjugated linoleic acids as functional food: an insight into their health benefits. Nutr Metab (Lond). 2009;6:36.
31. Godswill AG, Somtochukwu IV, Ikechukwu AO, Kate EC. Health benefits of micronutrients (vitamins and minerals) and their associated deficiency diseases: A systematic review. Int J Food Sci. 2020;3:1-32.
32. Aydin R. Conjugated linoleic acid: chemical structure, sources and biological properties. Turk J Vet Anim Sci. 2005;29:189-95.
33. Govari M, Vareltsis P. Conjugated linoleic acid in meat. J Hellenic Vet Med Soc. 2024;75(2):7513-22.
34. Badawy S, Liu Y, Guo M, Liu Z, Xie C, Marawan MA, et al. Conjugated linoleic acid (CLA) as a functional food: Is it beneficial or not? Food Res Int. 2023;172:113158.
35. Patil S. Unlocking the power of glutathione: exploring its mastery as an antioxidant and its impact on health and disease. Int J Med Sci. 2024;4(05):8-11.
36. Minich DM, Brown BI. A review of dietary (phyto) nutrients for glutathione support. Nutrients. 2019;11:2073.
37. Hristov BD. The role of glutathione metabolism in chronic illness development and its potential use as a novel therapeutic target. Cureus. 2022;14(9):29696.
38. Kulczyński B, Sidor A, Gramza-Michałowska A. Characteristics of selected antioxidative and bioactive compounds in meat and animal origin products. Antioxidants. 2019;8(9):335.
39. Kreider RB, Stout JR. Creatine in health and disease. Nutrients. 2021;13:447.
40. Ostojic SM, Prémusz V, Ács P. Creatine and cellular senescence: from molecular pathways to populational health. Exp Gerontol. 2025;112798.
41. Rais N, Ved A, Shadab M, Ahmad R, Shahid M. Taurine, a non-proteinous essential amino acid for human body systems: an overview. Arab Gulf J Sci Res. 2023;41:48-66.
42. Srivastava RN, Ara Z, Waliullah S, Singh A, Raj S, Mahdi AA, et al. Taurine is a future biomolecule for potential health benefits: A review. J Metabolomics Syst Biol. 2022;5:1-3.
43. Bae M, Ahmed K, Yim JE. Beneficial effects of taurine on metabolic parameters in animals and humans. J Obes Metab Syndr. 2022;31:134.
44. Wu G. Important roles of dietary taurine, creatine, carnosine, anserine and 4-hydroxyproline in human nutrition and health. Amino acids. 2020;52(3):329-60.
45. Alhasaniah AH. l-carnitine: Nutrition, pathology, and health benefits. Saudi J Biol Sci. 2023;30:103555.
46. Elantary R, Othman S. Role of L-carnitine in Cardiovascular Health: Literature Review. Cureus. 2024;16:1-15.
47. Baltic MZ, Boskovic M. When man met meat: meat in human nutrition from ancient times till today. Procedia Food Sci. 2015;5:6-9.
48. Rather MA, Dar BA, Sofi SN, Bhat BA, Qurishi MA. Foeniculum vulgare: A comprehensive review of its

- traditional use, phytochemistry, pharmacology, and safety. *Arab J Chem*. 2016;9:S1574-83.
49. Al-Snafi AE. The pharmacology of *Crocus sativus*-A review. *IOSR J Pharm*. 2016;6(6):8-38.
 50. Jahan T, Siddiqui D, Saleem MN, Alvi M. Ethnopharmacological Insights on Rubb-us-Soos (*Glycyrrhiza glabra*). *Eur J Med Plants*. 2025;36(2):156-76.
 51. Mahboubi M. *Rosa damascena* as holy ancient herb with novel applications. *J Trad Complement Med*. 2016;6(1):10-6.
 52. Vallée Marcotte B, Verheyde M, Pomerleau S, Doyen A, Couillard C. Health benefits of apple juice consumption: A review of interventional trials on humans. *Nutrients*. 2022;14(4):821.
 53. Giménez-Bastida JA, Ávila-Gálvez MÁ, Espín JC, González-Sarrías A. Evidence for health properties of pomegranate juices and extracts beyond nutrition: A critical systematic review of human studies. *Trends Food Sci Technol*. 2021;114:410-23.
 54. Muryana DY, Idhayanti RI, Chunaeni S. The Effect of Giving Green Bean Juice and Red Guava Juice on Hemoglobin Levels in Adolescent Girls. *Midwifery Nurs Res*. 2025;7(1):20-6.

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