

ZIZIPHUS JUJUBA MILL O‘SIMLIGINING FIZIOLOGIK FAOL ALKALOIDLARI

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Annotatsiya. *Itshumurtdoshlar – Rhamnaceae oilasiga mansub Ziziphus jujuba Mill – chilon jiyda o‘simligining alkaloidlari o‘rganilib, o‘simlikning bargilan 8 ta benzilizoxinolin va aporfin guruhiga mansub toza alkaloidlar ajratib olindi. Ajratib olingan alkaloidlardan yuzifin (7) yuzirin (8) yangi alkaloidlar bo‘lib tuzilishi aniqlangan. Izoboldin (4) va koklaurin (5) fiziologik faol alkaloidlar bo‘lib, gipotenziv (arterial qon bosimini tushirish) xususiyati aniqlangan.*

Kalit so‘zlar: *rhamnaceae, ziziphus jujuba mil, z. mucronata willd, rhamnus frangula l, peptid asoslar, benzilizoxinolin, aporfin, yuzifin, yuzirin, asimilobin, norizoboldin, izoboldin, koklaurin.*

Аннотация. *Изучены алкалоиды Ziziphus jujuba Mill семейства Rhamnaceae. Из листьев растения выделено 8 чистых алкалоидов, относящихся к группе бензилизохинолина и апорфина. Из выделенных алкалоидов юзифин (7) и юзирин (8) являются новыми. Алкалоиды изоболдин (4) и коклаурин (5) — физиологически активные алкалоиды, обладающие гипотензивными свойствами.*

Ключевые слова: *rhamnaceae, ziziphus jujuba mil, z. mucronata willd, rhamnus frangula l, пептидные основания, бензилизоксинолин, апорфин, юзифин, юзирин, асимилобин, ноизоболдин, изоболдин, коклаурин.*

Abstract. *The alkaloids of Ziziphus jujuba Mill of the Rhamnaceae family were studied. Eight pure alkaloids belonging to the benzylisoquinoline group were isolated from the plant leaves, and aporphine was determined. Of the isolated alkaloids, yusifine (7) and yuzirine (8) are new. The alkaloids isoboldine (4) and coclaurine (5) are physiologically active alkaloids with hypotensive properties.*

Keywords: *rhamnaceae, ziziphus jujuba mil, z. mucronata willd, rhamnus frangula l, peptide bases, benzyl isoxynoline, aporphine, yusifine, yuzirin, asimilobin, noisoboldin, isoboldin, coclaurin.*

Ziziphus jujuba Mill – chilon jiyda, itshumurtdoshlar – Rhamnaceae oilasiga mansub o‘simlik bo‘lib, Markaziy Osiyoda, jumladan O‘zbekistonda shifobaxsh mevali daraxt sifatida keng etishtiriladi.



1- rasm. Ziziphus jujuba Mill o‘simligi va mevasi

Ilgari bu o‘simlikning alkaloidlari bizda o‘rganilmagan, chet elda esa *Ziziphus* turkumiga mansub bir qator o‘simliklarning alkaloidlari etarli darajada o‘rganilgan. Masalan, *Ziziphus amphibia* A. Chev o‘simligining bargidan aporfin alkaloid-nutsiferin [1], *Ziziphus jujuba* po‘stlog‘idan – benzilizoxinolin guruhiga mansub alkaloid- koklaurin [1], *Z. mucronata Willd* bargidan esa N – metilkoklaurin va peptid alkaloidlari ajratib olingan [3]. *Ziziphus* turkumiga mansub o‘simliklarning barcha turlaridan ajratib olingan alkaloidlarning asosiy qismini peptid alkaloidlari tashkil etadi [3-5].

O‘zbekistonda o‘stirilayotgan *Ziziphus jujube* Mill o‘simligining madaniy va yovvoyi navlarini alkaloidlarini birinchi bo‘lib o‘rgandik. Akademik R. R. Shreder nomli Bog‘dorchilik va uzumchilik ilmiy tekshirish instituti (Toshkent viloyati, Toshkent tumani) bog‘idan meva pishish davrida yig‘ilgan *Z. Jujuba* chilonjiydaning madaniylashtirilgan navi barglaridan 9 ta alkaloid ajratib olingan.

Shulardan yuzifin (7), yuzirin (8) yangi alkaloidlar bo‘lib, amilobin (1), norizoboldin (3), izoboldin (4) lar shu o‘simlikdan birinchi marta, koklaurin (5) esa ilgari topilgan alkaloidlardir.

Ma‘lumki, ilmiy adabiyotlarda keltirilgan ma‘lumotlarga ko‘ra *Ziziphus jujube* Mill o‘simligi miqdor jihatdan alkaloidlarga boy bo‘lmasdan, undan ajratib olingan alkaloidlarning asosiy qismini peptid alkaloidlari tashkil etadi [4-5]. Lekin, biz esa bu o‘simlikning madaniy va yovvoyi navlaridan benzylizoxinolin va aporfin alkaloidlarini ajratib oldik (1 – jadval).

1– jadval

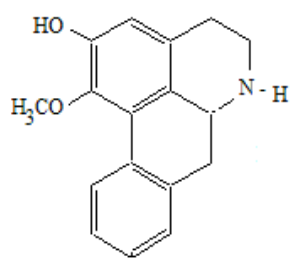
***Ziziphus jujube* Mill o‘simligining alkaloidlari**

№	Alkaloid	Tarkibi	Suyuq. t., °C	[α] _D
1	Asimilobin	C ₁₇ H ₁₇ NO ₂	175 – 177	- 210 (xloroform)
2	Talikmidin	C ₂₀ H ₂₃ NO ₄	192 – 193	+ (spirt)
3.	Norizoboldin	C ₁₈ H ₁₉ NO ₄	192 – 194	+ (spirt)
4.	Izoboldin	C ₁₈ H ₂₁ NO ₄	123 – 125	+ (xloroform)
5.	Koklaurin	C ₁₇ H ₁₉ NO ₃	218 – 220	+ 13 (spirt)
6.	N-metilkoklaurin	C ₁₈ H ₂₁ NO ₃	177 – 178	+ 25 (spirt)
7.	Yuzifin	C ₁₈ H ₂₁ NO ₃	158 – 159	+18 (xloroform)
8.	Yuzirin	C ₁₇ H ₁₅ NO ₃	203 – 205	
9.	Alkaloid № 9	M ⁺ 485	256 – 258	

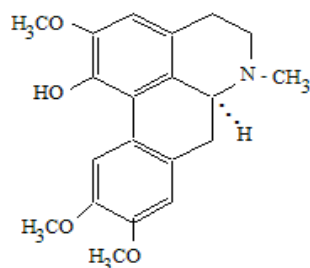
1 – jadvaldan ko‘rinadiki, faqat bitta alkaloid № 9 peptid asoslariga mansub bo‘lib, uning miqdori oz bo‘lganligi sababli tuzilishini aniqlashga imkoniyat bo‘l madi. Bu esa akademik S. Yu. Yunusovning “*Bir turdagi o‘simlik o‘sish joyi va sharoitiga qarab sifat va miqdor jihatdan turli alkaloidlar saqlashi mumkin*” degan nazariyasini isbotlovchi dalillardan biri hisoblanadi [6].

1– sxema

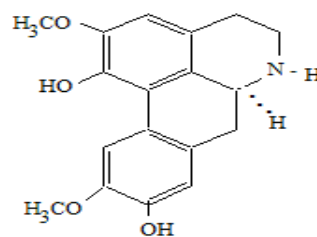
***Ziziphus jujube* Mill alkaloidlari**



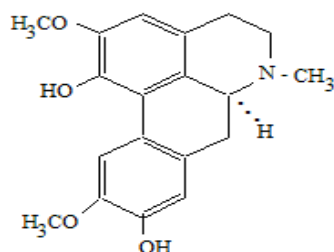
1 Asimilobin



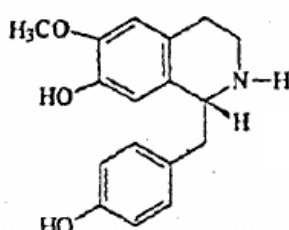
2 Talikmidin



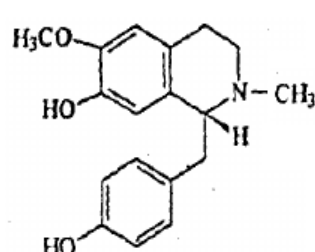
3 Norizoboldin



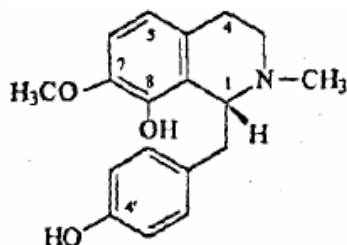
4 Izoboldin



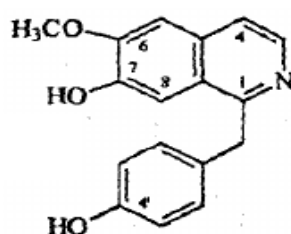
5 Koklaurin



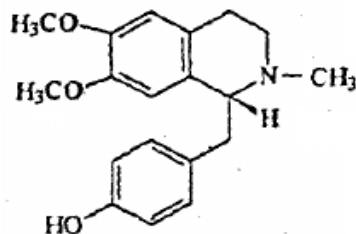
6 N-metilkoklaurin



7 Yuzifin



8 Yuzirin



9 Armepavin

Rhamnaceae – itshumurtdoshlar oilasiga mansub *Rhamnus frangula* o‘simliklarining alkaloidlari O‘zbekistonda (Mustaqil Davlatlar Hamdo‘stligida ham) umuman tekshirilmagan bo‘lib, chet el ilmiy adabiyotlarida esa *Rhamnus frangula* L o‘simligining bargi va po‘stlog‘idan peptid alkaloidlari [7] va benzilizoxinolin guruhiga mansub alkaloid- armepavin (9) [8] olinganligi haqida ma’lumotlar keltirilgan.

Biz tomondan tekshirilgan O‘zbekiston Respublikasi FA Botanika bog‘ida o‘stirilayotgan *Rhamnus franula* L o‘simligida alkaloidlar yig‘indisini miqdori juda oz (0,024) ekanligi aniqlandi, hamda o‘simliklar xom ashyosi etarli miqdorda bo‘lmaganligi sababli, ularning alkaloidlarini chuqur o‘rganishlikka imkoniyat bo‘lmadi.

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