



Study Of The Analgesic Activity Of 1- (4'-Dimethylaminophenyl -) - 6, 7 -Methylenedioxy-1,2,3,4- Tetrahydroisoquinoline

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ABSTRACT

The analgesic activity of a new compound 1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4 tetrahydroisoquinoline was studied under conditions of thermal and chemical irritation on the models "hot plate test", "acetic writhing". As a result of the studies carried out, it was found that the researching substance in various doses has an analgesic effect.

KEYWORDS

1-(4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4-tetrahydroisoquinoline, toxicity, analgesic activity, analgin, aspirin.

INTRODUCTION

The works provide data on analgesic action. Institute of Chemistry of Plant Substances named after academician S.Yu. Yunusov of the Academy of Sciences of the Republic of Uzbekistan by Sh. Djurakulov, V.I. Vinogradova.

The analgesic activity of the compound was investigated in 80 white outbred awake mice

weighing 18-20 g in comparison with aspirin and analgin using two tests: "vinegar writhing test" and "hot plate".

Compounds 1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4-tetrahydroisoquinoline in doses of 0.1-0.5-1.0-5.0-10.0 mg / kg, aspirin 100.0-200.0 mg / kg and analgin 10.0-20.0 mg / were administered

orally and after 60 minutes the properties of painful irritability were investigated on a heating plate at 58 °C.

THE MAIN FINDINGS AND RESULTS

The experiments have shown that the comparison drugs were analgin 10.0 mg / kg-71.4%, 20.0 mg / kg-50.7%, aspirin 100.0 mg / kg-58.0%, 200.0 mg / kg-71.1%. In the study of a new compound 1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4-tetrahydroisoquinoline at doses of 0.1 mg / kg-51.8%, 0.5 mg / kg-147, 1%, 1.0-116.0%, 5.0-76.9%, 10.0 mg / kg-74.3% and revealed that our new compound, when compared with analgin and

aspirin, showed analgesic activity 2 times higher at a dose of 0.5 mg / kg.

It was found that the compound exhibits a pronounced analgesic action, reducing the vinegar writhing and increasing the threshold of thermal pain irritation. Average effective dose (ED₅₀) for the suppression of writhing administered by intraperitoneal injection of acetic acid was 0.5 mg / kg for the investigating compound, and 180.5 mg / kg for analgin.

As a criterion for the latitude of the analgesic action, the LD₅₀ / ED₅₀ ratio was taken, which is designated as the analgesic index in table 1.

Table1

Comparative Analgesic Activity in Chemical Irritation (vinegar writhing Test)

No	Name of preparations	Ld ₅₀ MG/kg LD ₅₀ mg/kg	ED ₅₀ mg/kg ED ₅₀ mg/kg	Analgesic latitude index actions LD ₅₀ / ED ₅₀
1	1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4 tetrahydroisoquinoline	1250	5,0	250,0
2	Analgin	3500	180,5	19,4

Note: LD₅₀ is the average lethal dose, ED₅₀ is the average effective dose.

CONCLUSION

Thus, according to the hot plate test, compound 1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4 tetrahydroisoquinoline exhibited high analgesic activity, An increase in the threshold of pain sensitivity in thermal pain syndrome, the comparison drug - analgin.

Also, compound 1- (4'-Dimethylaminophenyl -) - 6,7-methylenedioxy-1,2,3,4-isoquinoline in

terms of the dose of effectiveness (ED₅₀) in the vinegar writhing test exceeds the comparison drug analgin by 36.1 times, and in the latitude of the analgesic action (LD₅₀ / ED₅₀) exceeds 12.9 times.

A higher analgesic index of a compound indicates its greater selectivity and safety compared to analgin.

REFERENCES

1. Djurakulov Sh.N., Vinogradova V.I., Zhumaev I.Z., Usmanov P.B. Synthesis of 1-aryl-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinolines and a number of derivatives // Reports of the Academy of Sciences of the RUz. Tashkent:2014, No. 3, -pp. 51-53.
2. Djurakulov Sh.N., Vinogradova V.I., Rejepov J., Rakhmanova H.A., Azamatov A.A. 1-(4'-Dimethylaminophenyl)-6,7-methylenedioxy-1,2,3,4-tetrahydroisoquinoline, exhibiting local anesthetic, analgesic and antiarrhythmic effects. Patent application No. IAP 2019. 0421.
3. Rejepov Jumadilla, Rakhmanova Hilola, Azamatov Aziz "Toxicity and anti-arrhythmic activity 1-(4-Dimethylaminophenyl dimethylaminophenyl)-6,7-dimethoxy-1,2,3,4 tetrahydroisoquinoline"// The American journal of medical sciences and pharmaceutical research 2020 -p. 130-133.