Chemistry of Natural Compounds, Vol. 29, No. 5, 1993

CONTROL OF THE PRODUCTION OF NEFROTSIZIN

N. S. Maksumova, F. Sh. Botnikova, and A. U. Mamatkhanov

UDC 615.332.658.516.3.547.97.2

Nefrotsizin (7-O-β-D-glucopyranosyloxy-3′,4′,5-trihydroxyflavone), isolated from the epigeal part of *Ferula varia* [1], is recommended as a hypoazotemic agent [2]. For the correct performance of the technological process and to ensure a normal yield, reliable control of production is necessary.

TABLE 1. Dynamics of the Extraction of Nefrotsizin with 80% Ethanol from the Epigeal Part of *Ferula varia*

Material analyzed	Amount of extract deposited on the chromatogram, ml	Nefrotsizin content, %	
		on the weight of the raw material	on the amount of nefrotsizin in the raw material
Epigeal part of *Ferula varia*			100
1	0.05	0.597	50.27
2	0.05	0.229	19.24
3	0.1	0.160	13.49
4	0.15	0.060	5.45
5	0.2	0.037	3.14
6	0.5	0.019	1.63
7	0.6	0.012	1.01
TOTAL		1.12	94.23

TABLE 2. Quantitative Indices of the Control of the Production of Nefrotsizin over the Stages of the Technological Process

Material analyzed	Amount of extract deposited on the chromatogram, ml	Nefrotsizin content, %	
		on the weight of the raw material	On the amount of nefrotsizin in the raw material
Initial raw material	0.05	1.19	100
Total alcoholic extract	0.05	1.12	94.23
Extracted meal	1.5	0.064	5.4
Chloroform extract	1.0	0.12	9.8
Technical nefrotsizin	—	0.86	72.57
Mother solution after filtration	1.2	0.097	8.26
Nefrotsizin after recrystallization	—	0.77	64.5
Mother solution after recrystallization	1.2	0.08	7.1
Unaccounted losses	—	—	5

Institute of the Chemistry of Plant Substances, Academy of Sciences of the Republic of Uzbekistan, Tashkent.
Translated from Khimiya Prirodnykh Soedinenii, No. 5, pp. 757-758, September-October, 1993. Original article submitted March 1, 1993.

0009-3130/93/2905-0676$12.50

The method developed is based on the quantitative determination of nefrotsizin in the raw material [3] and provides for the preliminary separation of the extractive substances, followed by their spectrometric determination. Corresponding to the technology [1], a method has been developed for the determination of nefrotsizin in extracts at all stages of purification, in the mother liquors, and in the extracted meal. In each case the volume of solution deposited on the chromatogram was selected individually so that the amount of nefrotsizin corresponded to the sensitivity of the method. We studied the dynamics of the extraction of nefrotsizin by 80% alcohol from the radical leaves of *Ferula varia* containing 1.19% of nefrotsizin, determining the nefrotsizin content in each case Table 1). The total amount of nefrotsizin isolated in seven extractions was 1.12% of the weight of the raw material, or 94.3% of the amount of nefrotsizin present in the leaves.

The results of the determination of nefrotsizin in the various stages of the technical process are given in Table 2. The yield of product in the nefrotsizin manufacturing process is 64.5%, the losses unaccounted for being 2% (Table 2).

The proposed method permits a reliable analysis of the plant raw material, the intermediate products of manufacture, and the finished preparation.

REFERENCES

1. É. Kh. Batirov, M. P. Yuldashev, G. A. Nezhinskaya, and V. M. Malikov, Khim. Prir. Soedin., 727 (1979).
2. L. G. Fabrina, V. N. Syrov, and M. B. Sultanov, Dokl. Akad. Nauk UzSSR, No. 11, 30 (1982).
3. N. S. Maksumova and G. L. Genkina, Khim. Prir. Soedin., No. 2, 217 (1993).