



## Identification Test of Medicinal Chemicals (BKO) in Uric Acid Herbal Preparations Circulating in Bantaeng District Using the Densitometric KLT Method

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**ABSTRACT:** Medicinal Chemicals (BKO) in herbal medicine will be bad for health. Some of the BKOs commonly added to uric acid herbs such as piroxicam, piroxicam is a drug used for the treatment of gout. But the reality is that in the market there are still many that contain BKO. Added medicinal chemicals can have harmful side effects for consumers. In this study, the identification of piroxicam in uric acid herbal medicine has been carried out. Identification was carried out by preliminary tests in the form of organoleptic / macroscopic and microscopic tests. Qualitative test in the form of thin layer chromatography (KLT), and quantitative test in the form of densitometry. The organoleptic test results showed that the samples had powder and capsule dosage forms with dark ash, white, yellow and pale yellow colors. It has a bitter taste and aromatic odor. Microscopic test results showed plant fragments from each ingredient contained in the composition of slimming herbs. In the KLT test with the mobile phase acetone: chlorophom: n-hexan (7: 2: 1) obtained the R<sub>f</sub> value of piroxicam comparator which is 0.8. Analysis of the five samples showed the same R<sub>f</sub> value as the piroxicam comparator. Densitometry test on the samples showed that samples 1, 2 and 4 were positive for piroxicam.

**KEYWORDS:** densitometri test, Gout herbs, medicinal chemicals, microscopic test, piroxicam, organoleptic test, thin layer chromatography test.

### INTRODUCTION

Jamu is a traditional herbal drink typical of Indonesia that still exists until the age of modern medicine today. The ingredients of jamu come from plants that are directly obtained from nature so that they are easily available and jamu does not contain synthetic chemicals so that the side effects are not too great. (Difa Aulia *et al.*, 2022)

Herbs that contain medicinal chemicals will harm consumers because they can create contraindications to other diseases suffered by consumers. In addition to contraindications, medicinal chemicals in herbs can produce side effects such as perforation of the stomach and kidney failure. Some herbal preparations that usually contain medicinal chemicals include jamu pegal linu, jamu slimming body, and jamu gout. The medicinal chemicals that are often used in herbal medicine are paracetamol, metampiron, dexamethasone, allopurinol, CTM, piroxicam and so on. (Bastia *et al.*, 2023)

Medicinal chemicals (BKOs) are synthetic compounds or chemical products derived from natural ingredients that are commonly used in modern medicine to enhance the efficacy of traditional medicines. The use of BKOs in herbal medicine will be harmful to health. The side effects of herbal medicine are usually not felt immediately, therefore usually consuming herbal medicine takes a long time and regularly. Meanwhile, if the herbal medicine is added with BKO, it will certainly have a quick effect, and will give confidence to the community about its efficacy. (Ayu & Cahyani, 2023).

Basically, the use of BKO in herbal medicine will be bad for health. The effect of herbs is usually not instant, therefore usually in consuming herbs it takes a long time and routinely. there are several BKOs that are commonly added to gout herbs such as paracetamol and piroxicam which are drugs used for the treatment of gout, the use of piroxicam has several side effects, namely skin redness, leukopenia, sometimes gastrointestinal toxicity and increased acute attacks of gout at the beginning of therapy (Roni & Minarsih, 2021).

Gout is a type of disease caused by diet and food consumption that is high in purine content resulting in an imbalance between the influx of purines and the body's ability to metabolize them, the buildup of uric acid cause a crystal in the joint Factors that affect high uric acid levels include age, obesity and consuming foods that contain high purines such as offal, nuts, seafood, meat and

alcoholic beverages. Uric acid that exceeds its solubility in the blood can precipitate monosodium urate which will form crystals that accumulate in the joints and eventually appear typical symptoms of gout such as complaints of pain at night and when you wake up, swelling and there are signs of inflammation in the metatarsal-phalangeal joint of the big toe. (Susanto *et al.*, 2023).

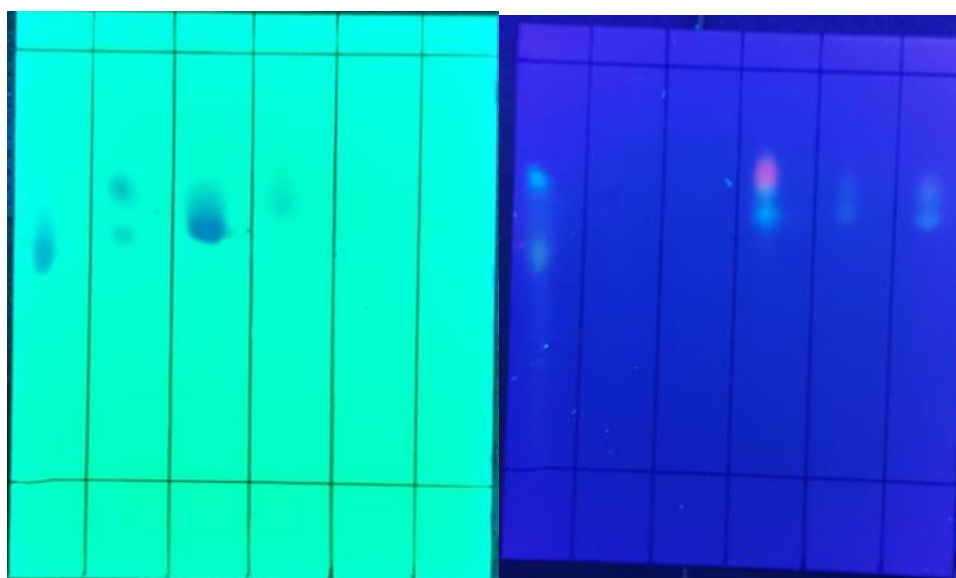


Figure 1. Thin layer chromatography images of uv 254 and 366 light

Table 1. Organoleptic/macroscopic examination results

No	Sample herba	Medicine	color	Odors	taste
1	Herba 1	capsule	Dark ash	aromatic	Bitter
2	Herba 2	capsule	white	Aromatic	Bitter
3	Herba 3	Powder	Yellow	Aromatik	Bitter
4	Herba 4	Capsule	yellow	Aromatik	Bitter
5	Herba 5	capsule	Yellow	Aromatik	Bitter

Table 2. Identification results of piroxicam in some gout herbs by KLT-Densitometry method

Sample	Rf value	Auc	levels BKO (mg/mL)	levelsBKO (%)	description.
1	0,8	231466.1	231465.2	23146524.2	+
2	0,8	398751.9	398751.0	39875104.2	+
3	1	420236	420235.1	42023514.2	–
4	0,9	433890.9	433890.0	43389004.2	–
5	1,1	1453691.3	1453690.4	145369044.2	–

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