

ANALYSIS OF EXTRACT BLACK CUMIN SEEDS (*Nigella Sativa* L.) IN THE FORM OF Self-Nanoemulsifying Drug Delivery System (SNEDDS) USING THIN LAYER CHROMATOGRAPHY DENSITOMETRY

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Abstrack

Black cumin seeds are known as traditional medicine for treating several diseases such as asthma, cough, bronchitis, anti-histamine, anti-diabetes, anti-inflammatory, anti-oxidant, and immunomodulators. The seeds of black cumin seeds are packaged in soft capsules combined with olive oil, dates, and honey. This herbal plant has poor permeability and solubility in water, so that a better delivery is formed to give the desired effect, namely SNEDDS. Herbal plants contain phytochemical compounds that affect pharmacological activities, so it is necessary to guarantee the quality of herbal plants based on compounds fitokimianya. Two aspects of quality assurance are qualitative and quantitative. The method of analysis used is TLC. The purpose of the study was to determine the comparison profiles of black cumin seed extract with black cumin seed extract in the form of Self-Nanoemulsifying Drug Delivery System (SNEDDS) by TLC-Densitometry. Black cumin seeds were extracted using a maceration method with 70% ethanol solvent. The results of the viscous extract were tested qualitatively with phytochemical screening using spray reactant and tube test. Furthermore, optimization of mobile phase for testing TLC extracts, standard thymol, and SNEDDS. TLC testing was carried out in 8 spots, namely 4 standard variations of thymol, black cumin seed extract, and 3 spots of SNEDDS. Analyzed using densitometry instruments. The TLC-Densitometry results are read qualitatively and quantitatively by comparing chromatogram data, maximum R_f values, and calculating the thymol levels in black cumin seed extract and SNEDDS. The seeds of black cumin positively contain alkaloids, terpenoids, flavonoids, saponins, and tannins. The chromatogram results show a similarly unique peak shape between standard thymol, black cumin seed extract, and SNEDDS. The maximum R_f value for the three samples is 0.51, 0.51, 0.49. Obtained levels of thymol on black cumin seed extract of 8.16% and thymol content in SNEDDS of 5.05%. There is no significant difference between black cumin seed extract and black cumin seeds in the form of SNEDDS.

Keywords: Black cumin seeds, SNEDDS, TLC (Thin Layer Chromatography), Densitometry

