



Liquid Chromatographic Determination of Thymol in a Pharmaceutical Formulation

Emilya Z. BALAYEVA ¹, Tahir A. SULEYMANOV ^{1*}, Jalal HANAEE ² & Abolghasem JOUYBAN ^{3,4}

¹ *Department of Pharmaceutical Chemistry, Faculty of Pharmacy,
Azerbaijan Medical University, Baku, Azerbaijan*

² *Pharmaceutical Analysis Research Center and Faculty of Pharmacy,
Tabriz University of Medical sciences, Tabriz, Iran*

³ *Food and Drug Safety Research Center, Tabriz University of Medical sciences, Tabriz, Iran*

⁴ *Digestive Diseases Research Institute, Tehran University of Medical Sciences, Tehran, Iran*

SUMMARY. A simple and rapid liquid chromatographic method was developed and validated for quantification of thymol in a liquid drug formulation and thyme extract. The optimum analytical conditions were: stationary phase of C₁₈ (octadecylsilane) with particle size of 5 μm at 30 °C, mobile phase of water:acetonitrile (1:1) with the flow rate of 1 mL/min, UV detection at 274 nm and injection volume of 10 μL. The proposed method was accurate (98.1-100.8%), precise (RSD of 0.85%), fast (< 15 min) and linear in the range of 3.2-4.8 μg/mL. It is successfully applied to quality control of a pharmaceutical formulation and thyme extract.

RESUMEN. Se desarrolló y validó un método de cromatografía líquida simple y rápido para la cuantificación de timol en una formulación de fármaco líquido y extracto de tomillo. Las condiciones analíticas óptimas fueron: fase estacionaria de C₁₈ (octadecilsilano) con un tamaño de partícula de 5 μm a 30 °C, fase móvil de agua: acetoni-trilo (1:1) con un caudal de 1 mL/min, detección UV a 274 nm y volumen de inyección de 10 μL. El método propuesto fue preciso (98.1-100.8%), preciso (RSD de 0.85%), rápido (< 15 min) y lineal en el rango de 3.2-4.8 μg/mL. Se aplica con éxito al control de calidad de una formulación farmacéutica y extracto de tomillo.

KEY WORDS: high performance liquid chromatography, "Kalinol plus" formulation, method validation, thymol.

* Author to whom correspondence should be addressed. *E-mail:* tair63@mail.ru