

DEVELOPMENT AND VALIDATION OF STABILITY INDICATING METHOD FOR DRUGS AND CHARACTERIZATION OF DEGRADATION PRODUCTS

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Resumo

Abstract: Stability studies of medicines by adequate methods of analyze can indicate possible alterations of the pharmaco to the same condition of storage. The inadequated use of medicines and the presence of degradation products due to a inadequate storage or a formulation can provoke adverse reactions. For this result is essential a indicative method of stability to determination of the dipyrone drug.

Keywords: Development and validation, stability of drug, dipyrone.

Palavras-chave:

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Introduction

Medication overuse for headache has been becoming an uncontrolled habit by world population. The misuse of medications and in a progressive dose intake, it can create damage for patient's health. With the high level consume of the popular drug - dipyrone, comes a concern, now that there is no tests that proves its stability.

Primary studies revealed incompatibility between the active and excipientes, so as the goal of this project is to develop and validate a chromatographic method for dipyrone separation and for degradation products in condition that would simulate the stability of medicines.

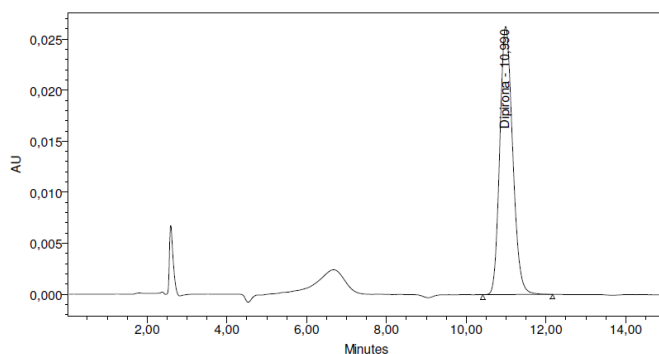


Figura 1: Chromatogram for dipyrone tablets sample.

Results and discussion

For the analysis was used a liquid chromatographic system with high efficiency with detection by arrangement of diode (CLAE-DAD), Merck Hitachi®. The chromatographic parameters were used: mobile phase of pH 7 phosphate buffer and methanol (72:28), Agilent® C18 250 x 4.6 mm, 5 µm particle, flow 1 ml / min, UV detection at 245 nm and volume of 10 µL injection. As a standard working solution dipyrone 0,025mg / mL (2) (3). For validation were performed the linearity testing, stress testing, precision, accuracy and robustness. The solutions were prepared in the concentration range between .005 to .030 mg / ml to linearity; for accuracy were at concentrations of 0.020; 0.025 and 0.030 mg / mL and the accuracy and robustness was used a concentration of 0.025 mg / ml. In all solutions used was a mixture of methanol / water 70:30 (v / v) as the eluent. As a sample we used tablets dipyrone 500 mg. In selectivity study assessed conditions of acid hydrolysis, basic, oxidation, temperature, humidity and the presence of metals, with standard solutions dipyrone, sample diluent, mobile phase and placebo. It was presented a linear method for the analysed concentration range, obtaining regression coefficients 0.9972, precise and accurate. The stress test was conducted under acidic degradation conditions alkaline, oxidising, wet, and photolytic metal to verify the formation of degradation product of dipyrone. On pictures 1 and 2 are presented the chromatogram in controlled condition of the basic degradation sample. This method enabled a separation of dipyrone and formed

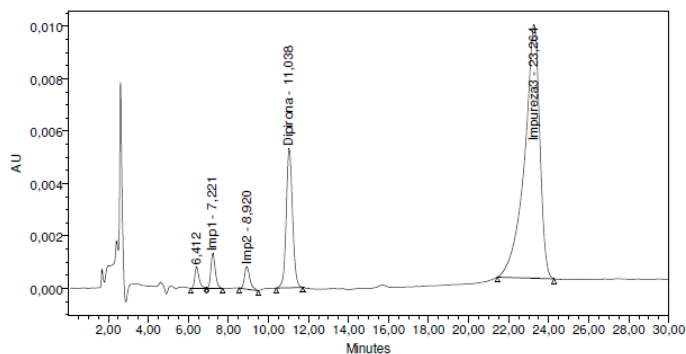


Figura 2: Chromatogram dipyrone solution sample in stress basic condition, NaOH 0,1M por 48 horas.

Conclusion

The proposed method was evaluated in the parameters proposed and was considered a pointed of stability to guarantee a separation between dipyrone and formed degradate in condition that would simulate storage condition and stability of medicine.

Thanks

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¹ RE N° 899/2003 – Validação de métodos bioanalíticos –ANVISA.

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