

# **ANALYSIS OF SELECTED COX-INHIBITOR DRUGS**

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# دراسات تحليلية مقارنة لبعض مثبطات انزيم كوكس المختارة

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## **Analysis of Selected COX-Inhibitor Drugs**

### **Abstract**

The aim of this work is to develop simple and accurate methods for determination of some NSAIDs either alone or in their mixtures with vitamins or in presence of some of their degradation products.

The chosen drugs in this thesis are Diclofenac sodium, Lornoxicam and Tenoxicam.

The suggested methods include spectrophotometric determination of Lornoxicam in presence of its oxidative degradation products. Whereas the determination of Tenoxicam was applied in presence of 2-Aminopyridine (2-AP).

Simultaneous determination of Tenoxicam and 2-Aminopyridine was achieved through first and second derivative methods in different solvents.

Derivative spectrophotometric and ratio derivative methods for determination of Diclofenac sodium, Pyridoxine hydrochloride and Thiamine mononitrate were developed.

TLC scanning densitometric method for the separation and quantification of Diclofenac sodium was carried out in presence of vitamins. Whereas TLC methods for the determination of Lornoxicam and Tenoxicam in presence of their oxidative degradation products were applied.

The plan of the work comprises the utilization of the proposed methods for the quantitative analysis of the cited drugs in raw materials and in their pharmaceutical formulations. In addition, statistical analysis to evaluate the obtained results of the proposed methods in comparison with the reported methods was carried out.

## **AKNOWLEDGEMENT**

I pray that "**Allah**" will accept this work and effort dedicated for his sake alone.

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## دراسات تحليلية مقارنة لبعض مثبطات انزيم كوكس المختارة

### المستخلص:

الهدف من هذه الدراسة هي استحداث بعض الطرق التحليلية لتقدير بعض المركبات الغير سترويدات في كل من المواد الخام والمركبات الصيدلية في وجود بعض الفيتامينات أو في وجود بعض نواتج تحليلها.

المركبات المختارة هي ديكلوفيناك صوديوم ، لورنوكسيكام وتونوكسيكام. الطرق المقترحة تشمل التقدير الطيفي للورنوكسيكام وتونوكسيكام في وجود نواتج تحليلهما. في هذه الطريق تم تقدير لورنوكسيكام في وجود نواتج التحلل المؤكسدة والتونوكسيكام في وجود ٢- أمينوبيريدين او ايضا في وجود نتائج التحلل المؤكسدة. استخدام الاشتقاق التفاضلى الأول والمشتق التفاضلى الثانى لتقدير التونوكسيكام و ٢ - أمينوبيريدين على التوالى في مذيبات مختلفة.

طريقتي الاشتقاق التفاضلى و الاشتقاق التفاضلى النسبي الثانى لتقدير مخلوط من الديكلوفيناك صوديوم و هيدروكلوريك البيروديكسين واحادي نترات الثيامين قد استحدثتا لتعين هذه المركبات.

قد تم تقدير الديكلوفيناك صوديوم و هيدروكلوريك البيروديكسين واحادي نترات الثيامين معا باستخدام كروماتوجرافيا الطبقة الرقيقة.

وفي طريقة أخرى قد تم فصل كل من اللورنوكسيكام والتونوكسيكام عن نواتج تحليلهم المؤكسدة باستخدام شريحة كروماتوجرافيا الطبقة الرقيقة أيضا .

وأخيرا تم عمل تحليل احصائي لتقييم النتائج الخاصة بالطرق المقترحة مقارنة بنتائج الطرق المرجعية.

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