A REVIEW ON ANALYTICAL METHODS FOR THE DETERMINATION OF SERATRODAST IN PHARMACEUTICAL FORMULATION

V. Mohan Goud*, Sridharan Sumanjali, M. Sandhya Rani, M. Sravanthi, G. Deepika, Khaja Pasha and JVC Sharma

Department of Pharmaceutical Chemistry, Joginpally B.R Pharmacy College, Yenkapally (V), Moinabad, R.R Dist.

ABSTRACT

Seratrodast is a quinine derivatives is a Thromboxane A2 receptor antagonist, recommended in mild to moderate asthma. It was found to be better in the improvement of Peak Expiratory Flow, Reduction in expectoration, Eosinophil Cationic Protein and albumin levels as compared to montelukast. This review article represents the various analytical methods which has been reported for estimation of seratrodast in pharmaceutical formulation. The Chromatographic method like, HPTLC, RP-HPLC and GC were reported. The spectrophotometric techniques like Ultra-Visible Spectrophotometric and Double beam spectrophotometric methods also reported.

KEYWORDS: Seratrodast, Anti-asthma and Analytical Methods.

INTRODUCTION

Seratrodast is a thromboxane A2 receptor antagonist used primarily in the treatment of asthma.\(^{1-2}\) Chemically it is 7-phenyl-7-(2, 4, 5-trimethyl-3,6-dioxocyclohexa-1,4dien-1-yl) heptanoic acid. It was the first TP receptor antagonist that was developed as an anti-asthmatic drug which does not affect thrombus formation thus ruling out any action on blood coagulation cascade.

![Figure I: Structure of Seratrodast.](image)

*Corresponding Author
V. Mohan Goud
Department of Pharmaceutical chemistry, Joginapally B.R Pharmacy College, Yenkapally (V), Moinabad, R.R Dist.

Article Received on 27 Dec. 2018, Revised on 18 Jan. 2019, Accepted on 09 Feb. 2019
DOI: 10.20959/wjpr20193-14278
Mechanism of action: Thromboxane (TXA2) is generated in the lungs of people with asthma, and when it signals through the thromboxane receptor it causes bronchoconstriction, vasoconstriction, mucous secretion, and airway hyper-responsiveness. Seratrodast inhibits the activity of the thromboxane receptor, by blocking the effects of TXA2.[3]

Analytical Method

A. Compendial Method: Monograph of Seratrodast is not official in any pharmacopoeia.

B. Reported Method

Chromatography Method: Most of the reported methods for determination of seratrodast in pharmaceutical formulations are HPLC method. The HPTLC and GC methods are also used widely to determine the assay of seratrodast. The summary of reported methods are tabulated below.

<table>
<thead>
<tr>
<th>Title</th>
<th>Method</th>
<th>Mobile Phase</th>
<th>Stationary Phase</th>
<th>Wavelength</th>
<th>Referance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERATRODAST in bulk and marketed formulation.</td>
<td>HPTLC</td>
<td>Toulene: Methanol: Glacial acetic acid. (8.5:1:0.5v/v/v)</td>
<td>Silica gel Aluminium plate 60F, 254.</td>
<td>200-400nm</td>
<td>[4]</td>
</tr>
<tr>
<td>Determination of seratrodast in human plasma.</td>
<td>HPLC</td>
<td>Methanol-0.02mol/L KH-2PO- 4 solution (75:25)</td>
<td>AC 18coloumn</td>
<td>268nm</td>
<td>[7]</td>
</tr>
<tr>
<td>Determination of seratrodast HCL in bulk and dosage form</td>
<td>HPLC</td>
<td>Acetonitrile: trifluoro acetic acid.(TFA) 30:70%V/V</td>
<td>Agilent eclipse plus c8 column 4.6(150) mm, 5um particle size</td>
<td>266nm</td>
<td>[8]</td>
</tr>
</tbody>
</table>

2. UV Spectroscopic Method.

<table>
<thead>
<tr>
<th>Title</th>
<th>Method</th>
<th>Wavelength</th>
<th>Linearity and R square</th>
<th>Recovery</th>
<th>Referance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation of seratrodast in bulk drug and pharmaceutical formulation.</td>
<td>UV method</td>
<td>267nm</td>
<td>2.5-25ug/ml</td>
<td>99.1-100.5%</td>
<td>[9]</td>
</tr>
<tr>
<td>Estimation of seratrodast in bulk and Pharmaceutical dosage form</td>
<td>Double beam spectrophotometric method (arodel 2450)</td>
<td>285nm</td>
<td>20-100ug/ml</td>
<td>–</td>
<td>[10]</td>
</tr>
</tbody>
</table>
DISCUSSION
The most widely used method for determination of seratrodast was HPLC method. Some various chromatographic conditions are presented in the given above table.

CONCLUSION
The Sensitivity, Specificity, and Better Separation Efficacy Enable HPLC to be used Frequently For Qualitative And Quantitative Determination of Seratrodast. The presented Information is Useful for the Future Study for Researcher Involved in Formulation Development And quality control of seratrodast.

REFERENCES