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

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ABSTRACT

Seratrodast is a quinine derivatives is a Thromboxane A2receptor 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 likeUltra-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.

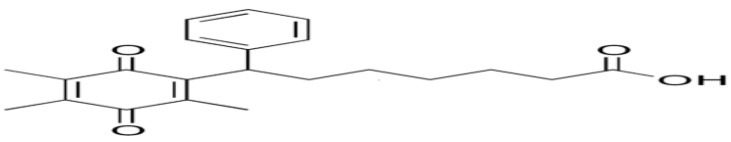

Figure I: Structure of Seratrodast.

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]

Analytial 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.

Summary of Chromatography Method of Seratrodast

Title	Method	Mobile Phase	Stationary Phase	Wavelenght	Referance
SERATRODAST in bulk and marketed formulation.	HPTLC	Toulene: Methanol: Glacial acetic acid. (8.5:1:0.5v/v/v)	Silica gel Aluminium plate 60F, 254.	200-400nm	[4]
Estimation of seratrodast HCL in tablet dosage form.	RP-HPLC.	Acetonitrile:water Ortho phosphoric acid. (50:40:10%v/v)	Hypersil c18 column phosphate buffer.	266nm	[5]
Determination ofresidual solvents in seratrodast.	GC	–	Single capillary column.	–	[6]
Determination of seratrodast in human plasma.	HPLC	Methanol-0.02mol/L KH-2PO- 4 solution (75:25)	AC 18coloumn	268nm	[7]
Determination of seratrodast HCL in bulk and dosage form	HPLC	Acetonitrile:trifluro acetic acid.(TFA) 30:70%V/V	Agilent eclipse plus c8 column 4.6(150) mm, 5um particle size	266nm	[8]

2. UV Spectroscopic Method.

Title	Method	Wavelenght	Linearity and R square	Recovery	Referance
Estimation of seratrodast in bulk drug and pharmaceutical formulation.	UV method	267nm	2.5-25ug/ml	99.1-100.5%	[9]
Estimation of seratrodast in bulk and Pharmaceutical dosage form	Double beam spectrophotometric method (arodel 2450)	285nm	20-100ug/ml	_	[10]

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.

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