



OXYCODONE IN NALTREXONE

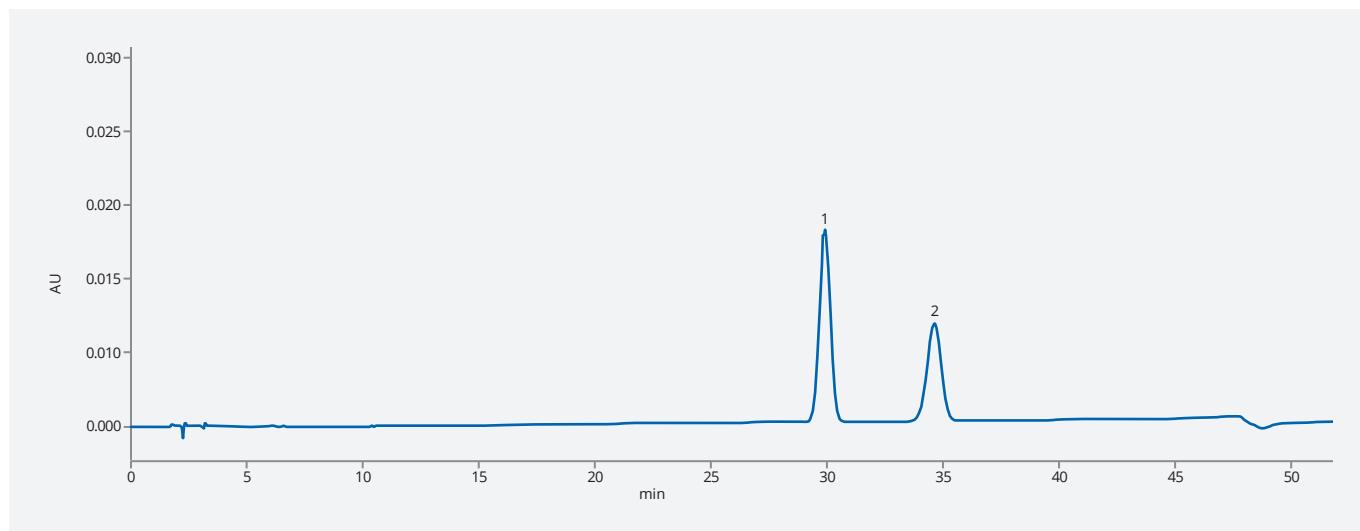
ABSTRACT

This application shows a simple, precise and stability-indicating HPLC method for simultaneous quantification of oxycodone and naltrexone.

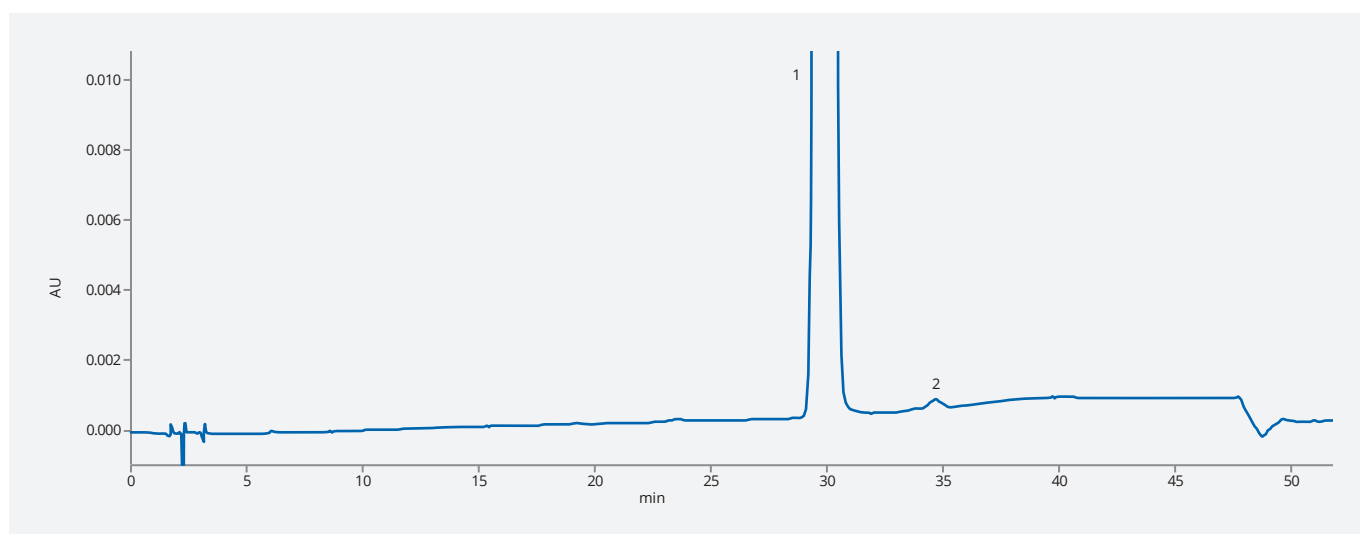
INTRODUCTION

Chronic pain is a therapeutic problem worldwide. Opioids like oxycodone are often used to treat such pain. Long-term therapy with opioids leads to tolerance to their analgesic effect which can result in a need for higher doses to achieve the same analgesic effect. The combination of oxycodone (an opioid agonist) and naltrexone (an opioid antagonist) is used for the management of pain severe enough to require daily, around-the-clock, long-term opioid treatment. Adding an ultra-low dose of naltrexone is used for deterring abuse or reducing opioid tolerance, but standard therapeutic doses of naltrexone will block oxycodone's pain-relieving effects and trigger acute withdrawal. Therefore, both compounds must be strictly controlled.

Oxycodone in Naltrexone



Naltrexone and Oxycodone standard

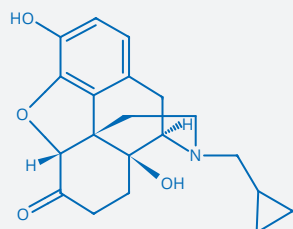


Naltrexone sample spiked with 0.1% of oxycodone

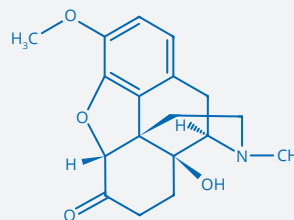
Oxycodone in Naltrexone

Chromatographic conditions

Column	ASTRA® C18-Hybrid, 5 µm		
Dimensions	250 mm x 4.6 mm		
Part number	AST-6016-LM46		
Solution A	Dissolve 1.10 g of 1-octanesulfonic acid sodium salt in 1000 mL of water. Adjust pH to 2.0 with phosphoric acid.		
Mobile phase	A: methanol : tetrahydrofuran : solution A (20:40:940) B: methanol : tetrahydrofuran : solution A (190:40:770)		
Elution	gradient		
Gradient elution	Time [min]	A [%]	B [%]
	0	50	50
	3	50	50
	40	0	100
	45	0	100
	46	50	50
	55	50	50
Flow rate	1.2 mL/min		
Temperature	30 °C		
Detection	UV at 230 nm		
Injection volume	10 µL		
Analytes	1. Naltrexone (4,5α-epoxy-14-hydroxy-3-methoxy-17-methyl-morphinan-6-one), CAS: 16590-41-3 2. Oxycodone ((5α)-17-(Cyclopropylmethyl)-3,14-dihydroxy-4,5-epoxymorphinan-6-one), CAS: 76-42-6		



Naltrexone



Oxycodone



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