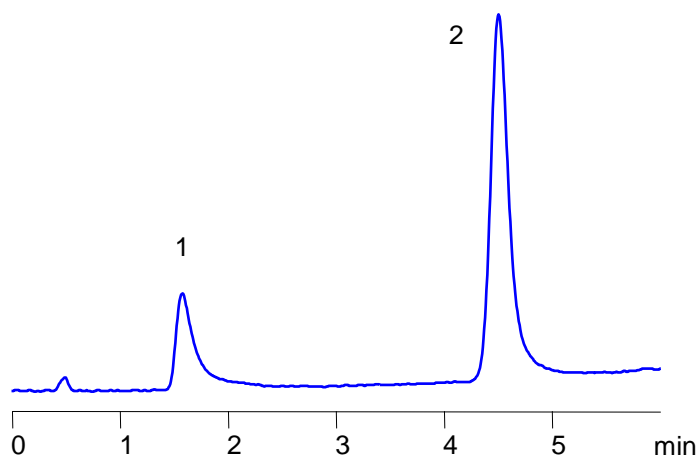


Cool Applications™

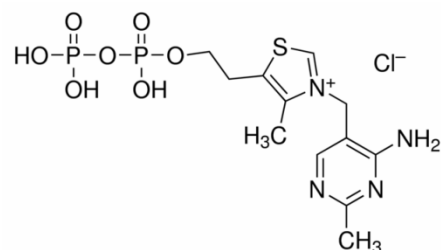
"Making Tough LC Applications Look Cool"

HPLC Separation of Thiamine Pyrophosphate and Pyridoxal Phosphate

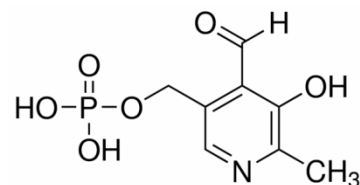
Column:	Primesep SB
Part number:	SB-46.050.0510
Column size:	4.6 x 50 mm, 5 µm, 100Å
Mobile phase:	A: 5% ACN with 0.05% formic acid B: 20% ACN with 0.8% formic acid
Gradient:	From 100% A to 100% B in 3 min, 3 min hold
Flow rate:	1 ml/min
Detection:	290 nm



Thiamine pyrophosphate



Pyridoxal phosphate



Application Comments

It has been discovered that the level of thiamine pyrophosphate and pyridoxal phosphate in blood is linked to Alzheimer's Disease [1, 2]. LC/MS analysis of these two compounds in blood is a challenging task, due to the complex sample preparation as well as a lack of retention on traditional C18 columns. Methods with ion-pairing reagents are not compatible with mass-spectrometry detection.

SIELC has developed a LC/MS method with good retention and separation for these two compounds using SIELC's Primesep SB reversed-phase anion-exchange column paired with a simple mobile-phase gradient.

Other polar acidic compounds in bio fluids can now also be analyzed by this approach.

1. [Am J Alzheimers Dis Other Demen.](#) 2011 Dec;26(8):588-98.

2. [Mol Cell Neurosci.](#) 2013 Jul; 55: 17-25.