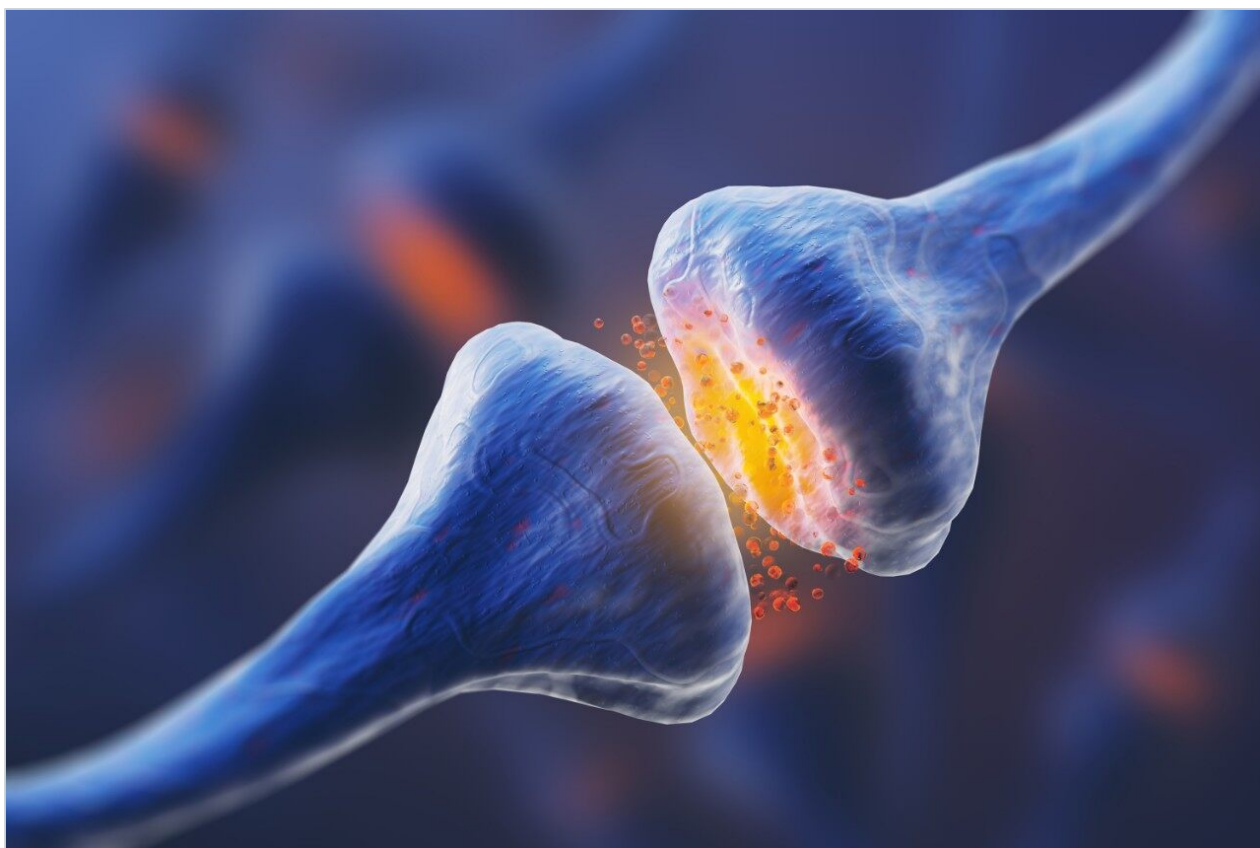


## LC-MS Isocratic Separation of Neurotransmitters on Atlantis HILIC Silica

---

Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

---

### Abstract

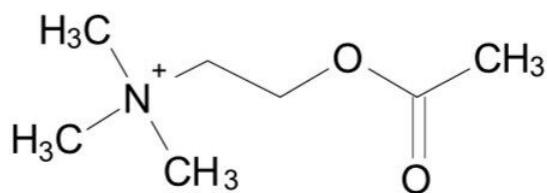
This application brief demonstrates the LC-MS isocratic separation of neurotransmitters on Atlantis HILIC Silica Columns.

---

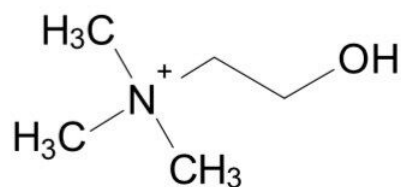
## Introduction

The compounds used in this study are:

1. Acetylcholine
2. Choline



Acetylcholine (ACh)



Choline (Ch)

---

## Experimental

### LC Conditions

|                 |                                                                  |
|-----------------|------------------------------------------------------------------|
| Column:         | Atlantis HILIC Silica, 2.1 x 50 mm, 3 μm                         |
| Part Number:    | 186002011                                                        |
| Mobile Phase A: | 10 mM NH <sub>4</sub> COOH with 0.125% HCOOH in H <sub>2</sub> O |

|                                     |                                                                                  |
|-------------------------------------|----------------------------------------------------------------------------------|
| Mobile Phase B:                     | 10 mM NH <sub>4</sub> COOH with 0.125% HCOOH in 90:5:5 ACN:MeOH:H <sub>2</sub> O |
| Isocratic Mobile Phase Composition: | 10% A; 90% B                                                                     |
| Flow Rate:                          | 0.5 mL/min                                                                       |
| Injection Volume:                   | 10.0 µL (full loop)                                                              |
| Sample Concentration:               | 5 ng/mL each                                                                     |
| Sample Diluent:                     | 75:25 ACN:MeOH with 0.2% HCOOH                                                   |
| Column Temp.:                       | 30 °C                                                                            |
| Weak and Strong Needle Wash:        | 95:5 ACN:H <sub>2</sub> O                                                        |
| Detection:                          | MS                                                                               |
| Sampling Rate:                      | 5 points/sec                                                                     |
| Instrument:                         | Waters ACQUITY UPLC with TQD                                                     |

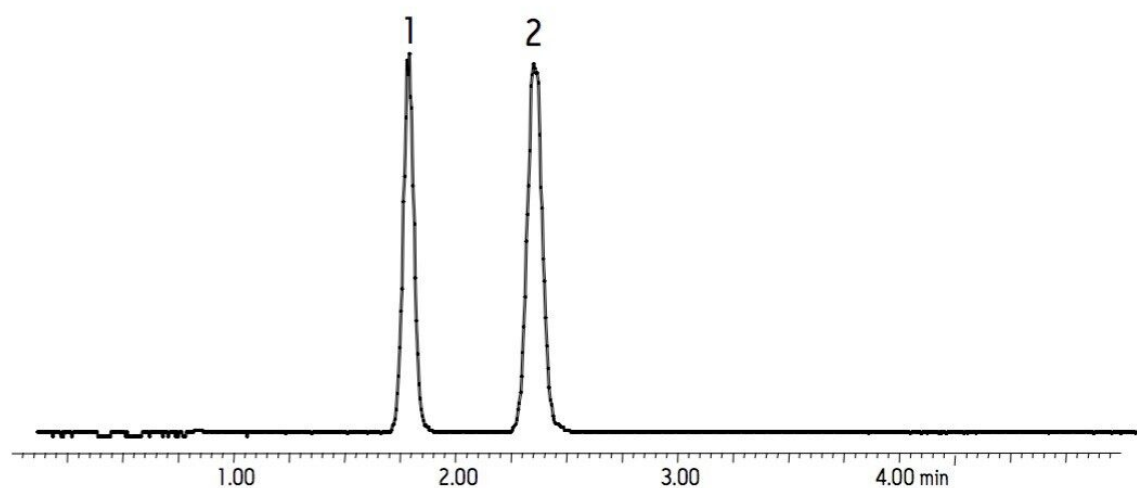
## MS Conditions

|                          |                                      |
|--------------------------|--------------------------------------|
| Ionization Mode:         | ES+                                  |
| Capillary:               | 0.5 kV                               |
| Cone:                    | 25 V (acetylcholine), 40 V (choline) |
| Source Temperature:      | 120 °C                               |
| Desolvation Temperature: | 350 °C                               |

|                       |                                                              |
|-----------------------|--------------------------------------------------------------|
| Desolvation Gas Flow: | 800 L/Hr                                                     |
| SIR:                  | 146.1 <i>m/z</i> (acetylcholine); 104.0 <i>m/z</i> (choline) |
| Dwell Time:           | 150 msec                                                     |
| ISD:                  | 10 msec                                                      |
| ICD:                  | 10 msec                                                      |

---

## Results and Discussion



---

## Featured Products

ACQUITY UPLC System <<https://www.waters.com/514207>>

WA64071, August 2009

© 2021 Waters Corporation. All Rights Reserved.