

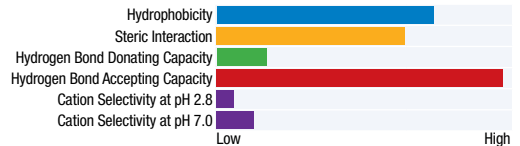
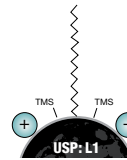
# APPLICATIONS

## Improved Reversed Phase Retention and Separation of 11 Nucleosides with the Luna<sup>®</sup> Omega PS C18 HPLC/UHPLC Column

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### Overview

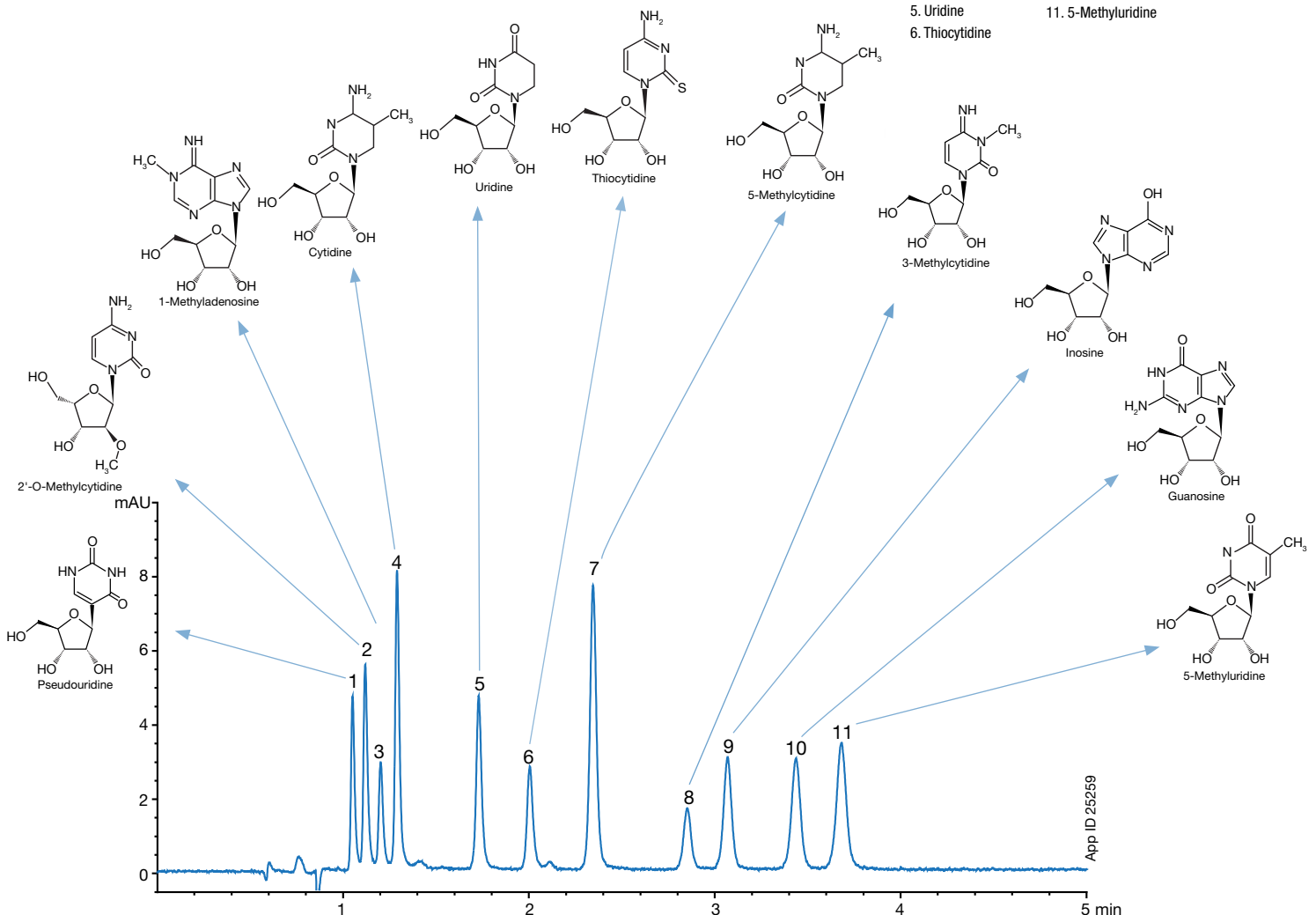
Nucleosides are small polar bases that are substituted with either ribose or deoxyribose saccharides that can undergo phosphorylation to produce nucleotides. Both nucleosides and nucleotides are polar compounds that serve as the monomeric building blocks of deoxyribonucleic acid (DNA) and ribonucleic acid (RNA), among other essential life functions. Their biological importance has promoted the development of various analytical methods for the simultaneous analysis of nucleosides/nucleotides.<sup>1,2</sup> However, because of the extreme polarity of these compounds, they present a reversed phase analysis challenge. Several methods outline the use of an ion-pairing agent to circumnavigate these analytical challenges.<sup>3</sup> In this application is a representative, non-ion-pairing separation of 11 nucleosides using a Luna Omega PS C18 column. This column's C18 column stationary phase makes it a USP L1 column, but with a unique positive surface charge that increases polar retention and selectivity, while exhibiting improved peak shape for basic analytes.



**Column:** Luna Omega 1.6 μm PS C18  
**Dimensions:** 100 x 2.1 mm  
**Part No.:** 00D-4752-AN  
**Mobile Phase:** Water with 5 mM Ammonium Phosphate (pH 5.3)/Methanol (97:3)  
**Flow Rate:** 0.35 mL/min  
**Injection Volume:** 10 μL  
**Temperature:** 40 °C

**Detection:** UV @ 254 nm

- Sample:**
- |                        |                     |
|------------------------|---------------------|
| 1. Pseudouridine       | 7. 5-Methylcytidine |
| 2. 2'-O-Methylcytidine | 8. 3-Methylcytidine |
| 3. 1-Methyladenosine   | 9. Inosine          |
| 4. Cytidine            | 10. Guanosine       |
| 5. Uridine             | 11. 5-Methyluridine |
| 6. Thiocytidine        |                     |



# APPLICATIONS

## Luna® Omega UHPLC Column Ordering Information

| 1.6 µm Microbore Columns (mm) |             |             |             |
|-------------------------------|-------------|-------------|-------------|
| Phases                        | 50 x 1.0    | 100 x 1.0   | 150 x 1.0   |
| <b>Polar C18</b>              | 00B-4748-A0 | 00D-4748-A0 | 00F-4748-A0 |
| <b>C18</b>                    | 00B-4742-A0 | 00D-4742-A0 | 00F-4742-A0 |

| 1.6 µm Minibore Columns (mm) |             |             |             |             | SecurityGuard™<br>ULTRA Cartridges† |
|------------------------------|-------------|-------------|-------------|-------------|-------------------------------------|
| Phases                       | 30 x 2.1    | 50 x 2.1    | 100 x 2.1   | 150 x 2.1   | 3/pk                                |
| <b>Polar C18</b>             | 00A-4748-AN | 00B-4748-AN | 00D-4748-AN | 00F-4748-AN | AJ0-9505                            |
| <b>PS C18</b>                | 00A-4752-AN | 00B-4752-AN | 00D-4752-AN | 00F-4752-AN | AJ0-9508                            |
| <b>C18</b>                   | 00A-4742-AN | 00B-4742-AN | 00D-4742-AN | 00F-4742-AN | AJ0-9502                            |

for 2.1 mm ID



†SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000

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