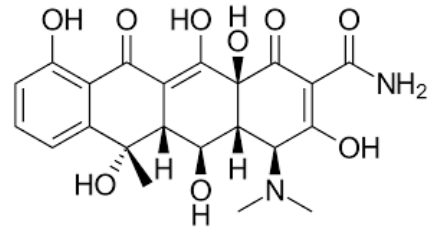
Improved peak shape of tetracycline using a coated steel HPLC column – AppNote

Improved peak shape of a tetracycline antibiotic

Oxytetracycline has a role as an antibacterial drug, a protein synthesis inhibitor, an antimicrobial agent, an anti-inflammatory drug, and a bacterial metabolite. However, this compound interacts with stainless steel during HPLC and is known to have substandard peak shapes.

This data highlights important chromatographic performance improvements between our metal free treated stainless steel HPLC column and untreated stainless steel column with the same packing material and method conditions on the same instrument. Metal free surface treatments are available on all Cogent HPLC columns upon request.



Peak:

Oxytetracycline

Trace	Hardware	Width (*Minutes*)	Plates (N)
Red	Metal Free Coated Steel	0.46	304
Blue	non Coated Stainless Steel	1.18	43

Method Conditions:

Column: Cogent Diamond Hydride™, 4µm, 100Å

Catalog No.: 70000-15D-2 and, 70000-15P-2

Dimensions of both columns: 2.1mm x 150mm

Mobile Phase: 50% acetonitrile / 50% DI water / 0.1% formic acid

Injection vol.: 1µL

Flow rate: 0.4mL / minute

Detection: 270nm

Sample Preparation: oxytetracycline 0.2mg / mL in DI water

Note: Oxytetracycline is known as a broad-spectrum antibiotic due to its activity against such a wide range of infections. Oxytetracycline inhibits cell growth by inhibiting translation. It binds to the 30S ribosomal subunit and prevents the amino-acyl tRNA from binding to the A site of the ribosome.