

<b>Product Name:</b>	Vancomycin B HCl, EvoPure®
<b>Product Number:</b>	V008
<b>CAS Number:</b>	1404-93-9
<b>Molecular Formula:</b>	$C_{66}H_{75}Cl_2N_9O_{24} \cdot xHCl$ (lot specific)
<b>Molecular Weight:</b>	1449.25 (Free base)
<b>Form:</b>	Powder
<b>Description:</b>	<p>Vancomycin B HCl, EvoPure® is freely soluble in aqueous solution and is &gt;99.0% pure. EvoPure® products are purified single antibiotic fractions, most &gt;99% pure.</p> <p><a href="#">Click here</a> for more vancomycin products.</p>
<b>Mechanism of Action:</b>	<p>Vancomycin B HCl prevents cell wall synthesis by two separate mechanisms. One mechanism prevents N-acetylmuramic acid (NAM) and N-acetylglucosamine (NAG) peptides from linking together forming the peptidoglycan backbone through the incorporation of the Vancomycin B HCl molecule to the D-alanyl-D-alanine terminal. The second mechanism prevents crosslinking between amino acid residues in the peptidoglycan chain altering bacterial cell membrane permeability as well as RNA synthesis.</p>
<b>Spectrum:</b>	<p>Vancomycin HCl inhibits growth of many gram-positive bacteria including the antibiotic resistant superbug, MRSA (Methicillin resistant <i>Staphylococcus aureus</i>). Vancomycin HCl is effective for treating MRSA infections because it inhibits cell wall synthesis through a different mechanism than <math>\beta</math>-lactam antibiotics.</p> <p>Over the years gram-positive bacteria have emerged that are resistant to Vancomycin HCl, such as Vancomycin HCl resistant <i>Staphylococcus aureus</i> (VRSA) and Vancomycin HCl-resistant <i>enterococci</i> (VRE).</p>

**Microbiology Applications** Vancomycin B HCl inhibits the growth of most gram-positive bacteria including the MRSA. It is usually only indicated for the treatment of serious or life-threatening bacterial infections like those caused by  $\beta$ -lactam-resistant staphylococci bacterial infections. There are now Vancomycin HCl resistant bacteria, primarily, Vancomycin HCl resistant staph aureus (VRSA), and Vancomycin HCl resistant enterococci (VRE).

Vancomycin HCl is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- Methicillin resistant *Staphylococcus aureus* (MRSA) 0.25  $\mu\text{g/mL}$  - 2  $\mu\text{g/mL}$
- *Clostridium difficile* 0.06  $\mu\text{g/mL}$  - 4  $\mu\text{g/mL}$
- For a complete list of vancomycin HCl MIC values, [click here](#).

## Media Supplements

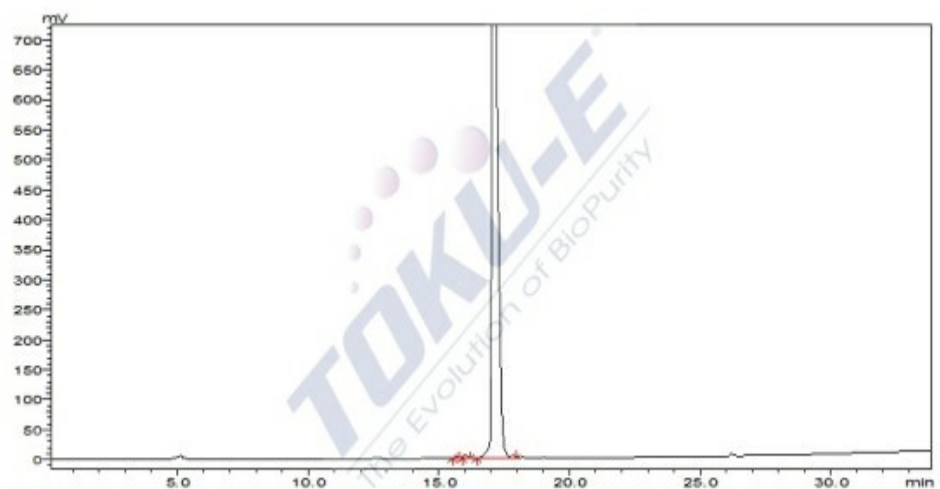
Vancomycin can be used as a selective agent in Columbia Blood Agar, a selective media for *Campylobacter* species.

## Plant Biology Applications

Vancomycin HCl has low toxicity to Plant cells and is often used in *Agrobacterium tumefaciens* mediated transformations as a method to control its growth in plant cell culture media. Vancomycin HCl is also suitable for bacterial contamination control in plant cell culture media and is sometimes used in combination with cefotaxime due to greater synergistic effects. Most studies do not describe any negative effects to the plant by using Vancomycin HCl, however, in a study done by Silva and Fukai (2001), lower efficiency of transformation was found at concentrations of 500  $\mu\text{g/mL}$ .

## Technical Data:

### HPLC Chromatogram Showing Ultra High, Single Fraction Purity of Vancomycin HCl, EvoPure®



**References:**

Courvalin, Patrice. "Vancomycin Resistance in Gram-Positive Cocci." *Oxford Journals*(2006): 25-34. *Clinical Infectious Diseases*. Web. 21 Aug. 2012.

Pollock, H.M., Holt J., and Murray C., Comparison of susceptibilities of anaerobic bacteria to cefemenoxime, ceftriaxone and other antimicrobial compounds, *Antimicrob. Agents Chemother.*, Vol. 23, pp.780-783, 1983

Silva J.A. and Fukai S., The impact of carbenicillin, cefotaxime and vancomycin on chrysanthemum and tobacco TCL morphogenesis and *Agrobacterium* growth, *J. Appl. Hort.*, Vol. 3(1), pp. 3-12, 2001.

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