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| Product Name: | Florfenicol |
| Product Number: | F002 |
| CAS Number: | 73231-34-2 |
| Molecular Formula: | $C_{12}H_{14}Cl_2FNO_4S$ |
| Molecular Weight: | 358.21 |
| Form: | Powder |
| Appearance: | White crystalline powder |
| Solubility: | Lipids: Soluble Water: Mostly insoluble. DMSO, DMF: soluble. |
| Source: | Derivative of Thiamphenicol |
| pH: | 4.5-6.5 |
| Melting Point: | 152-156°C |
| Optical Rotation: | -16° to -19° |
| Storage Conditions: | 2-8°C |
| Description: | <p>Florfenicol is a fluorinated synthetic analog of Thiamphenicol, belonging to the amphenicol class which also contains Choramphenicol. It is metabolized to Florfenicol Amine. It is a highly potent inhibitor of bacterial protein synthesis and has primarily bacteriostatic activity. It is used in animal research applications against to combat bacterial infections, and to promote animal growth in aquaculture. Florfenicol is soluble in DMSO and DMF, but sparingly soluble in aqueous buffers.</p> <p>We also carry:</p> <ul style="list-style-type: none">• Florfenicol Amine (F027) |
| Mechanism of Action: | After entering a bacterial cell, Florfenicol binds to the 50S ribosomal subunit preventing peptide bond formation. Resistance to Florfenicol may be due to decreased cell permeability or a mutation in the 50S ribosomal subunit. |
| Spectrum: | Florfenicol is a broad-spectrum antibiotic targeting a wide variety of Gram-positive and Gram-negative bacteria, especially those causing bovine respiratory infections such as bovine respiratory disease (<i>Mannheimia haemolytica</i> , <i>Pasteurella multocida</i> , and <i>Histophilus somni</i>). It can also be used for the bacteria causing enteric septicemia in catfish. |

Microbiology Applications Florfenicol is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against Gram-positive and Gram-negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options. Representative MIC values include:

- *Haemophilus parasuis* 0.24 µg/mL – 4 µg/mL
- *Escherichia coli* 0.5 µg/mL – 128 µg/mL
- For a representative list of fFlorfenicol MIC values, [click here](#).

The first Florfenicol resistance gene (*pp-flo*) was found in a fish pathogen. Plasmid-mediated florfenicol resistance is encoded by the *floR* gene in *E. coli* (CloECKAERT et al, 2000).

References:

CloECKAERT A et al (2000) Plasmid-mediated Florfenicol resistance encoded by the *floR* gene in *Escherichia coli* isolated from cattle. Antimicrob. Agents. Chemother. 44(10):2858-2860

Liu Y et al (2018) Relevance of breast cancer resistance protein to pharmacokinetics of florfenicol in chickens: A perspective from in vivo and in vitro studies. Int. J. Mol. Sci. 19(10):3165 PMID [30326566](#)

Schwarz S, Kehrenberg C, Doublet B, and CloECKAERT A (2004) Molecular basis of bacterial resistance to chloramphenicol and florfenicol. FEMS Microbiol Rev. 28(5):519-542 PMID 15539072

Shuang G et al (2011) Immunosuppressive activity of Florfenicol on the immune responses in mice. Immunol. Invest. 40(4):356-366.

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