Chloramphenicol

Product Number  C 7795
Storage Temperature  2-8 °C

Product Description
Molecular Formula: C$_{11}$H$_{12}$Cl$_2$N$_2$O$_5$
Molecular Weight: 323.1
CAS Number: 56-75-7
Melting point: 150.5-151.5 °C$^1$
pK$_{a}$: approximately 5.5$^2$
Extinction coefficient: E$_{1%}$ = 298 (278 nm)$^{1,3}$
$\lambda_{\text{max}}$: 278 nm$^3$
Specific rotation: +18.6° (48.6 mg/ml, ethanol, 27 °C)

This product is a broad spectrum antibiotic, which is normally used to block bacterial protein synthesis. It binds to the 50S ribosomal subunit and prevents attachment of aminoacyl tRNA to the ribosome, resulting in blocking of the peptidyl transferase step.$^4$

This product is γ-irradiated and commonly used as a bacterial selection agent for the amplification of plasmid DNA production (10-20 μg/ml and higher).$^5$

This product has also been shown to inhibit the inactivation of pentobarbital, codeine, dilantin, analgesic-antipyretic drugs and oral anticoagulants in veterinary studies. This leads to increased plasma levels of these drugs and longer duration of action times.$^6$

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in ethanol (50 mg/ml). This product is also very soluble in butanol, acetone, and ethyl acetate; slightly soluble in water (2.5 mg/ml); and insoluble in benzene, petroleum ether, and vegetable oils.$^1$

Storage/Stability
Stock solutions are made in alcohol at 10 mg/ml and then diluted with water to a final stock concentration of 1 mg/ml. The stock solution should be stored refrigerated and used within 30 days.$^7$

Solutions of chloroamphenicol in water (0.25% = 7.7 mM) are degraded by sunlight, UV light or tungsten light at or near room temperature over a period of 96 hours.$^8$ With degradation, the solutions become more yellow and an orange-yellow precipitate forms. Chloroamphenicol did not degrade when dissolved in ethanol or benzene and stored under the same conditions.

References
1. The Merck Index, 11th ed., Entry# 2068.
7. United States Pharmacopeia, 23, p. 1693