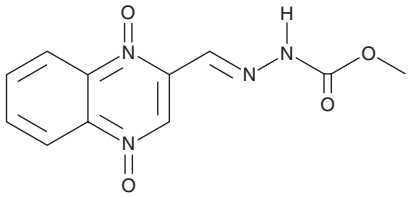
PRODUCT INFORMATION

Carbadox

Item No. 24903

CAS Registry No.:	6804-07-5
Formal Name:	2-[(1,4-dioxido-2-quinoxalinyl)methylene]-hydrazinecarboxylic acid, methyl ester
MF:	$C_{11}H_{10}N_4O_4$
FW:	262.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 244, 381 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Carbadox is supplied as a crystalline solid. A stock solution may be made by dissolving the carbadox in the solvent of choice. The solubility of carbadox in 1 M NaOH is approximately 50 mg/ml.

Carbadox is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Carbadox is a broad-spectrum antimicrobial agent that inhibits the growth of bacteria, including *S. typhimurium* strains (MICs = 3.6-14.3 µM under aerobic conditions) and *S. hyodysenteriae* isolates from pigs (MIC_{90} = 0.006 µg/ml).[1,2] It also inhibits the growth of *C. hyointestinalis*, *C. mucosalis*, and *C. coli* isolates from pigs (MIC_{90}s = ≤0.125-1 µg/ml) and of spirochete bacterial isolates from dogs (MIC_{90}s = <0.00625 µg/ml).[3,4] *In vivo*, carbadox is protective and effective against *S. hyodysenteriae* infection in mice (ED_{50}s = 7.7 and 5 mg/kg, respectively).[2] It is mutagenic and induces DNA breaks and chromosomal damage to Vero cells at a concentration of 10 µg/ml.[5]

References

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2. Hayashi, T., Suenaga, I., Narukawa, N., *et al.* In vitro and in vivo activities of sedecamycin against *Treponema hyodysenteriae*. *Antimicrob. Agents Chemother.* **32(4)**, 458-461 (1988).
3. Gebhart, C.J., Ward, G.E., and Kurtz, H.J. In vitro activities of 47 antimicrobial agents against three *Campylobacter* spp. from pigs. *Antimicrob. Agents Chemother.* **27(1)**, 55-59 (1985).
4. Prapasarakul, N., Ochi, K., and Adachi, Y. In vitro susceptibility and a new point mutation associated with tylosin-resistance in Japanese canine intestinal spirochetes. *J. Vet. Med. Sci.* **65(12)**, 1275-1280 (2003).
5. Chen, Q., Tang, S., Jin, X., *et al.* Investigation of the genotoxicity of quinocetone, carbadox and olaquindox *in vitro* using Vero cells. *Food Chem. Toxicol.* **47(2)**, 328-334 (2009).

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