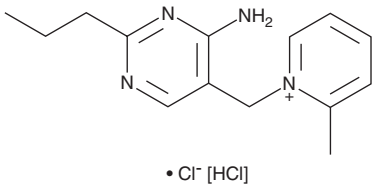
PRODUCT INFORMATION

Amprolium (hydrochloride)

Item No. 25506

CAS Registry No.: 137-88-2
Formal Name: 1-[(4-amino-2-propyl-5-pyrimidinyl) methyl]-2-methyl-pyridinium, monochloride, monohydrochloride
MF: $C_{14}H_{19}N_4 \bullet Cl$ [HCl]
FW: 315.2
Purity: ≥98%
UV/Vis.: λ_{max}: 240, 266 nm
Supplied as: A crystalline solid
Storage: 4°C
Stability: ≥4 years



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

Laboratory Procedures

Amprolium (hydrochloride) is supplied as a crystalline solid. Aqueous solutions of amprolium (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of amprolium (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Amprolium is a thiamine analog and antiprotozoal agent that interferes with thiamine metabolism and inhibits carbohydrate synthesis.[1-4] It competitively inhibits thiamine uptake by *E. tenella* schizonts and by chick host intestinal cells (K_is = 7.6 and 326 µM, respectively).[1] It also inhibits hexose formation and pentose utilization *ex vivo* in isolated lysed rat erythrocytes and in liver, kidney, heart, and intestinal tissue homogenates following dietary administration.[2] Amprolium (1,000 ppm in feed) inhibits oocyst output and sporulation of *Eimeria maxima*, *E. brunetti*, and *E. acervulina* in infected chicks.[3] It also decreases lesion and oocyst scores and mortality of *E. tenella*-infected chicks following dietary administration of a 125 ppm dose.[4] Amprolium (100 µM) induces apoptosis in PC12 rat adrenal cells and increases the level of cleaved caspase-3.[5] Formulations containing amprolium have been used as coccidiostats in poultry processing.

References

1. James, S. Thiamine uptake in isolated schizonts of *Eimeria tenella* and the inhibitory effects of amprolium. *Parasitology* **80(2)**, 313-322 (1980).
2. Brin, M. The antithiamine effects of amprolium in rats on tissue transketolase activity. *Toxicol. Appl. Pharmacol.* **6(4)**, 454-458 (1964).
3. Joyner, L.P. and Norton, C.C. The anticoccidial effects of amprolium, dinitolmide and monensin against *Eimeria maxima*, *E. brunetti* and *E. acervulina* with particular reference to oocyst sporulation. *Parasitology* **75(2)**, 155-164 (1977).
4. Abbas, R.I., Manzoor, Z., Munawar, S.H., *et al.* Anticoccidial activity of hydrochloric acid (HCl) against *Eimeria tenella* in broiler chickens. *Pesq. Vet. Bras.* **31(5)**, 425-429 (2011).
5. Chornyy, S., Parkhomenko, J., and Chorna, N. Thiamine deficiency caused by thiamine antagonists triggers upregulation of apoptosis inducing factor gene expression and leads to caspase 3-mediated apoptosis in neuronally differentiated rat PC-12 cells. *Acta. Biochim. Pol.* **54(2)**, 315-322 (2007).

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