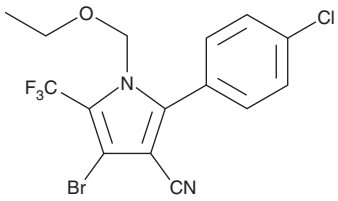
PRODUCT INFORMATION

Chlorfenapyr

Item No. 24141

CAS Registry No.: 122453-73-0
Formal Name: 4-bromo-2-(4-chlorophenyl)-1-(ethoxymethyl)-5-(trifluoromethyl)-1H-pyrrole-3-carbonitrile
Synonym: AC-303630
MF: $C_{15}H_{11}BrClF_3N_2O$
FW: 407.6
Purity: ≥98%
Supplied as: A 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

Chlorfenapyr is supplied as a solid. A stock solution may be made by dissolving the chlorfenapyr in the solvent of choice, which should be purged with an inert gas. Chlorfenapyr is slightly soluble in methanol and chloroform.

Description

Chlorfenapyr is a pyrrole pro-insecticide that is metabolized *in vivo* into CL 303268 by mixed function oxidases.[1] Chlorfenapyr increases respiratory activity in German cockroaches when used at concentrations ranging from 1 to 10 µg per insect but has no effect on respiration in Sf9 cells when used at concentrations ranging from 1 to 100 µM and does not affect respiration in isolated rat liver mitochondria up to a concentration of 10 µM. Chlorfenapyr is active against a variety of insects including those susceptible and resistant to pyrethroid and organophosphate insecticides, including horn flies (*H. irritans*) as well as *A. culicifacies* and *A. stephensi* mosquitos that carry malaria (LC_{50}s = 2-2.39% suspension impregnated on paper).[2,3] Chlorfenapyr is lethal to rats with LD_{50} values of 441 and 1,152 mg/kg for male and female rats, respectively.[1] Formulations containing chlorfenapyr have been used to control termites and in agriculture to control various insects.

References

1. Black, B.C., Hollingworth, R.M., Ahammadsahib, K.I., *et al.* Insecticidal action and mitochondrial uncoupling activity of AC-303,630 and related halogenated pyrroles. *Pestic. Biochem. Physiol.* **50(2)**, 115-128 (1994).
2. Sheppard, D.C. and Joyce, J.A. Increased susceptibility of pyrethroid-resistant horn flies (Diptera: Muscidae) to chlorfenapyr. *J. Econ. Entomol.* **91(2)**, 398-400 (1998).
3. Raghavendra, K., Barik, T.K., Sharma, P., *et al.* Chlorfenapyr: A new insecticide with novel mode of action can control pyrethroid resistant malaria vectors. *Malar. J.* **10**, 16 (2011).

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