ANTIPARASITIC COMPOUNDS

FIELD OF THE INVENTION

This invention relates to the use of cyclopropyl amide compounds, compositions and methods for controlling parasitic infestations of animals.

BACKGROUND OF THE INVENTION

A number of parasites are known to infest animals. These parasites can be great nuisances to both the animals and their owners.

Treatment of animals to prevent infestation by parasites, or to reduce or control the proliferation of these parasites, especially ectoparasites of animals such as ticks in animals is thus important.

The compounds currently available for parasite control and especially ectoparasite and tick control do not always demonstrate good efficacy, sufficiently quick onset of activity, or a long duration of action.

Ectoparasites tend to irritate the animals and can also cause clinical disease and adverse sub-clinical conditions, either by themselves or by carrying vector-transmitted pathogens.

Specifically, ticks parasitize on wild as well as domesticated animals and humans, and are known or suspected to be responsible for the transmission of pathogens including bacteria, viruses and protozoan parasites. Ticks also release toxins which cause inflammation or paralysis in the host. Occasionally, these toxins are fatal to the host.

On the other hand, such ectoparasites seriously impact productivity in the livestock animal industry by reducing weight gain, or milk production, causing inferior quality hide, wool, and meat, and in some cases resulting in mortality. Ectoparasites are also responsible, in part, for the spread of pathogens as vectors and cause discomfort in livestock and companion animals impacting animal welfare.

For example, a parasite which is prevalent among livestock animals, such as cattle, is the tick of the genus *Rhipicephalus*, especially those of the species *R. microplus* (tropical cattle tick), *R. decoloratus* and *R. annulatus*. Ticks such as *R. microplus* (formerly *Boophilus microplus*) are difficult to control because they lay eggs in the pasture where animals graze.

Such limitations include toxicity and safety of existing compounds both for the animal and the user/owner, limited efficacy (potency, onset of activity and duration), narrow spectrum of parasiticide action, bioavailability, pharmacokinetics and pharmacodynamics challenges and resistance issues. Further, certain aspects of the invention overcome at least some limitations in the use of current parasiticides, particularly in providing effective long term, safe control of parasites, that are known to be difficult to treat.

International patent applications WO2016/168056, WO2016/168058, WO 2016/168059 and WO2018/071327 disclose certain cyclopropyl amide compounds as having insecticidal and acaricidal activity and therefore, being useful in controlling agricultural plant pests. Although veterinary use is briefly mentioned, none of these citations exemplify or describe their use of the compounds as claimed herein that address at least some of the needs for its use of such compounds as veterinary medicament as described above. Furthermore, it was found that only a small selection of the compounds as described in these citation actually have an effect on veterinary parasites.

SUMMARY ~~OF THE INVENTION~~

The present ~~invention~~ disclosure ~~is~~ relate~~sd~~ ~~in a first aspect~~ to a compound ~~-~~of Formula (I)

with one or more substituents of selected from the group consisting of $(C_1$-$C_3)$alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

or **R**$^7$ and **R**$^8$ together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=, =N-, -NH-, -O-, -S(O)-, -$S(O)_2$- and -S-, wherein the ring formed by **R**$^7$ and **R**$^8$ is optionally substituted with one or more substituents of selected from the group consisting of $(C_1$-$C_3)$alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

**R**$^{10}$ is selected from the group consisting of H, $(C_1$-$C_6)$alkyl, $C_3$-$C_6)$cycloalkyl), $(C_1$-$C_6)$alkyloxy-$(C_1$-$C_6)$-alkyl, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyloxy-$(C_1$-$C_6)$haloalkyl, $C_1$-$C_6)$alkyloxy-$(C_2$-$C_6)$-alkenyl, $(C_1$-$C_6)$alkyl-$(C_3$-$C_6)$cycloalkyl, heterocycle, aryl and $(C_1$-$C_6)$alkylphenyl;

**R**$^{11}$ is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, S$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)$(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$;

**R**$^{12}$ is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, S$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)$(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$;

**R**$^{13}$ is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, CHO, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, S$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)$(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, and triazolyl;

**R**$^{14}$ is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, S$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)$(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$;

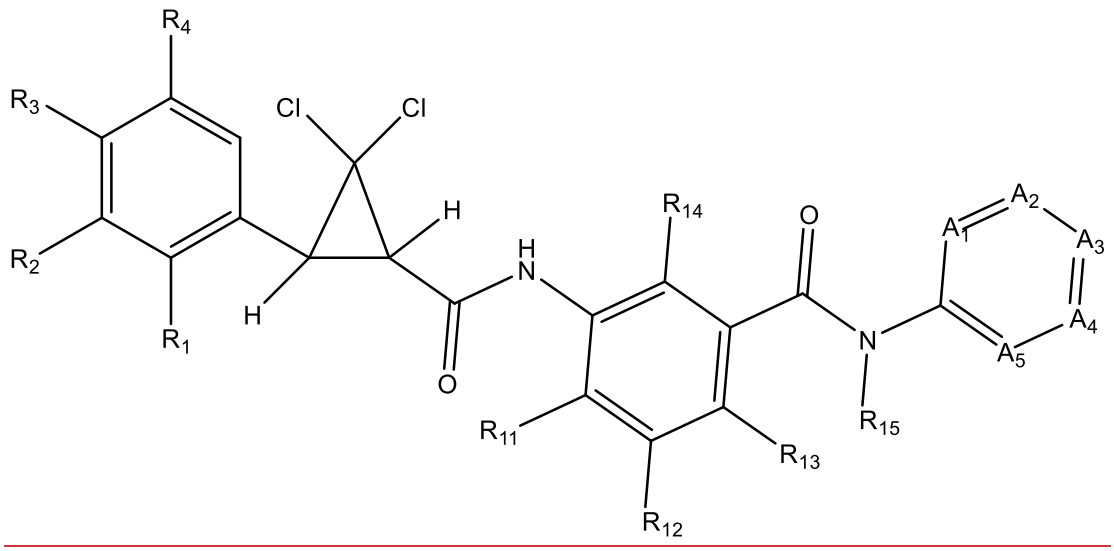
**R**$^{15}$ is selected from the group consisting of H, $(C_1$-$C_6)$alkyl, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$haloalkyl**,** $(C_1$-$C_6)$alkoxy$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, and $(C_1$-$C_6)$alkoxyC(=O)$(C_1$-$C_6)$alkyl

H, $(C_1$-$C_6)$alkyl, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$haloalkyl**;**

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

Suitably the compounds of the ~~invention~~ disclosure and any ~~embodiments~~ examples thereof are for use in a method of treatment or control of a parasitic infestation of an animal~~.~~.

In one aspect, there is provided a Compound of Formula (I)




Formula (I)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof,

for use in therapy, wherein

$A_1$ is $CR_5$, N=O, or N;

$A_2$ is $CR_6$, N=O, or N;

$A_3$ is $CR_7$, N=O, or N;

$A_4$ is $CR_8$, N=O or N;

$A_5$ is $CR_9$, N=O or N;

wherein no more than 3 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ are N or N=O;

**$R^1$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^2$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$ ;

**$R^3$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$ ;

**$R^4$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$ ;

**$R^5$** is selected from the group consisting of H, F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$haloalkyl, NHCH$_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^6$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$haloalkyl, NHCH$_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^7$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-

$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^8$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, NO$_2$, OH, NH$_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-S(O)$_2$NH$_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-S(O)$_2$NH$_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^9$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, NO$_2$, OH, NH$_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-S(O)$_2$NH$_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-S(O)$_2$NH$_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

or **$R^6$** and **$R^7$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -CH$_2$-, -CH=, =CH-,-N=,

=N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^6$** and **R$^7$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

or **R$^7$** and **R$^8$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=, =N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^7$** and **R$^8$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

**R$^{10}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, $C_3$-$C_6$)cycloalkyl), ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)-alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)haloalkyl, $C_1$-$C_6$)alkyloxy-($C_2$-$C_6$)-alkenyl, ($C_1$-$C_6$)alkyl-($C_3$-$C_6$)cycloalkyl, heterocycle, aryl and ($C_1$-$C_6$)alkylphenyl;

**R$^{11}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{12}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{13}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, CHO, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$, and triazolyl;

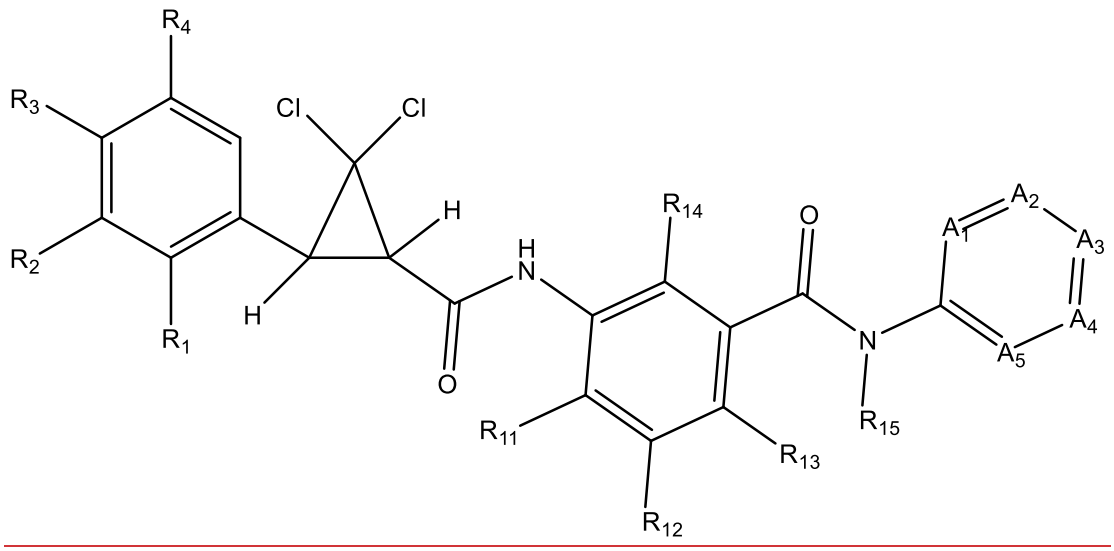
**R$^{14}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{15}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkoxy($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, and ($C_1$-$C_6$)alkoxyC(=O)($C_1$-$C_6$)alkyl

H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl;

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

In another aspect, there is provided use of a Compound of Formula (I)




Formula (I)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof,

in the manufacture of a medicament for the treatment or control of a parasitic infestation of an animal, wherein

$A_1$ is $CR_5$, N=O, or N;

$A_2$ is $CR_6$, N=O, or N;

$A_3$ is $CR_7$, N=O, or N;

$A_4$ is $CR_8$, N=O or N;

$A_5$ is $CR_9$, N=O or N;

wherein no more than 3 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ are N or N=O;

**$R^1$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^2$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^3$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^4$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$ ;

**$R^5$** is selected from the group consisting of H, F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N$(C(=O)O(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), S$(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), S(O)$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$haloalkyl, S$(O)_2(C_1$-$C_6)$alkyl, S$(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$haloalkyl, NHCH$_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^6$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N$(C(=O)O(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), S$(C_1$-$C_6)$alkyl, S$(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), S(O)$(C_1$-$C_6)$alkyl, S(O)$(C_1$-$C_6)$haloalkyl, S$(O)_2(C_1$-$C_6)$alkyl, S$(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkylCH$_2$O$(C_1$-$C_6)$haloalkyl, NHCH$_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^7$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)$_2$, N$(C(=O)O(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-

$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^8$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, NO$_2$, OH, NH$_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-S(O)$_2$NH$_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-S(O)$_2$NH$_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^9$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, NO$_2$, OH, NH$_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-S(O)$_2$NH$_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-S(O)$_2$NH$_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH(S(O)$_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkylCH$_2$O($C_1$-$C_6$)haloalkyl, NHCH$_2$($C_3$-$C_6$)cycloalkyl, NH$_2$, NO$_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

or **$R^6$** and **$R^7$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -CH$_2$-, -CH=, =CH-,-N=,

=N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^6$** and **R$^7$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

or **R$^7$** and **R$^8$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=, =N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^7$** and **R$^8$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

**R$^{10}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, $C_3$-$C_6$)cycloalkyl), ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)-alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)haloalkyl, $C_1$-$C_6$)alkyloxy-($C_2$-$C_6$)-alkenyl, ($C_1$-$C_6$)alkyl-($C_3$-$C_6$)cycloalkyl, heterocycle, aryl and ($C_1$-$C_6$)alkylphenyl;

**R$^{11}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{12}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{13}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, CHO, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$, and triazolyl;

**R$^{14}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{15}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkoxy($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, and ($C_1$-$C_6$)alkoxyC(=O)($C_1$-$C_6$)alkyl

H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl;

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

Suitably the compound and use according to disclosure ~~invention~~ and/or any ~~embodiment~~ example thereof

**R$^1$** is selected from the group consisting of H F, and Cl;

**R$^2$** is selected from the group consisting of H, F, and Cl;

**R$^3$** is selected from the group consisting of H, F, and Cl;

**R$^4$** is selected from the group consisting of H, F, and Cl;

**R[5]** is selected from the group consisting of H F, Cl, Br, and I;

**R[6]** is selected from the group consisting of H, F, and Cl, Br, and $CH_3$;

**R[7]** is selected from the group consisting of H F, Cl, Br, and I;

**R[8]** is selected from the group consisting of H, F, Cl, and Br, and $CH_3$;

**R[9]** is selected from the group consisting of H F, Cl, Br, and I;

**R[11]** is H;

**R[12]** is selected from the group consisting H, F, CL, $CH_3$, $CF_3$;

**R[13]** is selected from the group consisting of H, F, Cl, $CF_3$ and $CH_3$;

**R[14]** is H or F;

**R[15]** is selected from the group consisting of H and $CH_3$.

Suitably the compound and use according to disclosure ~~invention~~ and/or any ~~embodiment~~ example thereof

**R[1]** is H;

**R[2]** is selected from the group consisting of H, F, and Cl;

**R[3]** is selected from the group consisting of H, Cl, F, and Br;

**R[4]** is H, F, Cl;

**R[5]** is selected from the group consisting of H F, and Cl;

**R[6]** is selected from the group consisting of H, F, and Cl, and $CH_3$;

**R[7]** is selected from the group consisting of H F, and Cl;

**R[8]** is selected from the group consisting of H, F, Cl, and $CH_3$;

**R[9]** is selected from the group consisting of H F, and Cl;

**R[11]** is H;

**R[12]** is selected from the group consisting H, F and Cl;

**R[13]** is selected from the group consisting of H, F, and Cl;

**R[14]** is H;

**R[15]** is selected from the group consisting of H and $CH_3$.

Surprisingly it has been found that the compounds described in this application can be used as medicaments, especially as veterinary antiparasitic medicaments to treat or control parasite infestation of animals.

The disclosure ~~invention~~ is understood to include compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof as described in this application for use as a medicament, especially a veterinary medicament, more preferably an antiparasitic veterinary medicament.

The disclosure ~~invention~~ is also understood to include the use of compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof as described in this application in the manufacture of a medicament for the treatment or control of parasite infestation of animals.

The disclosure ~~invention~~ is also understood to include the use of compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof as described in this application in the manufacture of a medicament for the protection of animals from parasite infestation.

The compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof are suitably used in a method to treat or control an ectoparasite infestation.

Suitably the compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof are used in a method, wherein the parasitic infestation is a tick infestation or flea infestation. The compounds are suitably used for a tick infestation.

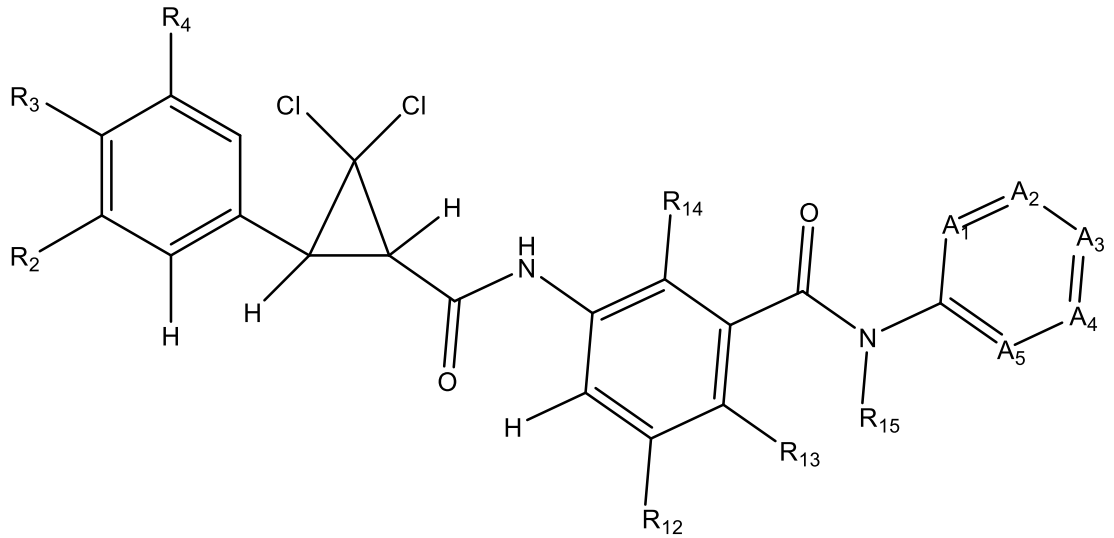
The compounds of the disclosure ~~invention~~ and/or ~~embodiments~~ examples thereof are suitably used against parasites wherein the parasite is a one host tick or a multi-host tick. Suitably the compounds of the disclosure ~~invention~~ are used against *Rhipicephalus microplus*.

In a suitable use or method of the disclosure ~~invention~~ and/or any ~~embodiment~~ example thereof, the animal is a warm-blooded animal such as a mammal. Suitably, the compounds are also active in a livestock animal, such as a ruminant, bovine animal, or cattle. It was also found that the compounds are active in fish, against a sea lice infestation. Also the compounds are found active in a companion animal, such as a canine animal or a feline animal, especially a dog or cat.

In a suitable use or method of the disclosure ~~invention~~ and/or any ~~embodiment~~ example thereof, the animal is protected from a parasite infestation. Preferably an existing parasite infestation of the animal is treated or controlled.

In a suitable use or method of the disclosure ~~invention~~ and/or any ~~embodiment~~ example thereof, the method comprises administering the compound to an animal weekly, bi-weekly, monthly, every 6 weeks, every 2 months or every 3 months.

In another aspect, there is provided a Compound of Formula (III)

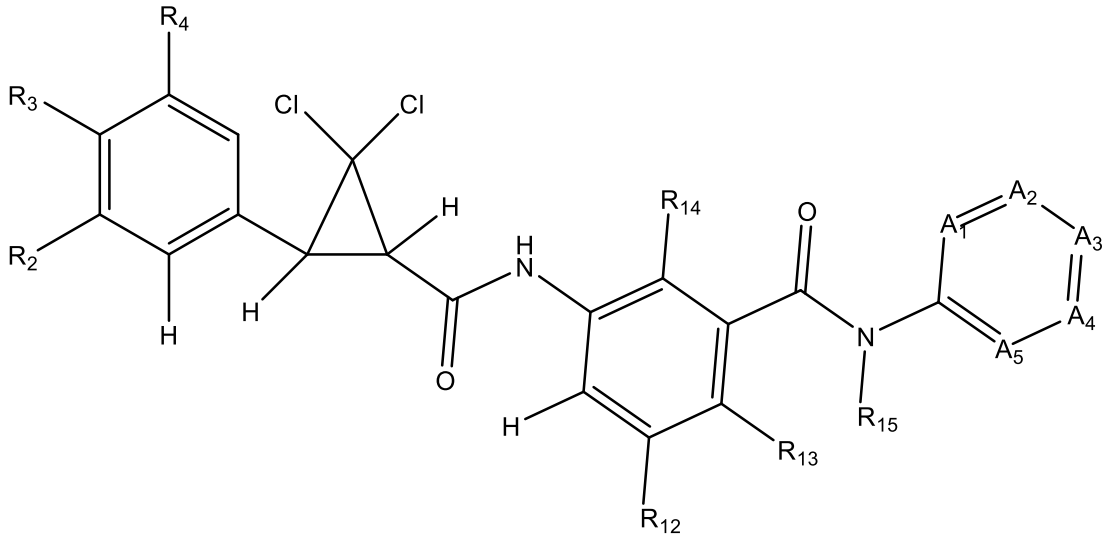



Formula (III)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof for use in therapy as defined herein, wherein the compound is selected from the group consisting of

| # | R2 | R3 | R4 | R12 | R13 | R14 | R15 | A1 | A2 | A3 | A4 | A5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 254 | OCHF2 | H | Cl | H | Cl | H | H | CF | CH | CF | CH | CH |
| 302 | Me | F | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 303 | Me | F | CF3 | H | Cl | H | H | CF | CNH2 | CF | CH | CH |
| 317 | Cl | H | Cl | H | Cl | H | H | CH | CBr | CF | CF | CH |
| 454 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CCH3 | CH |
| 455 | Cl | H | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 456 | Cl | H | Cl | H | Cl | H | H | CF | N | CH | CH | CF |
| 457 | Cl | H | Cl | F | Me | H | H | N | CH | CF | CH | CF |
| 458 | Cl | H | Cl | H | Cl | H | H | CF | CH | CH | CH | CF |
| 460 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CH | N |
| 462 | Cl | Cl | H | H | Cl | H | H | N | CH | CF | CH | CF |
| 463 | Cl | H | Cl | H | F | H | H | N | CH | CF | CH | CF |
| 464 | Cl | H | Cl | F | Cl | H | H | N | CH | CF | CH | CF |
| 465 | Cl | H | Cl | H | H | F | H | N | CH | CF | CH | CF |
| 466 | Cl | Cl | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 467 | Cl | H | Cl | H | Cl | F | H | N | CH | CF | CH | CF |
| 468 | H | Cl | Cl | H | Me | F | H | N | CH | CF | CH | CF |
| 469 | Cl | F | Cl | H | Cl | H | H | N | CH | CF | CH | CF |
| 471 | CF3 | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 472 | CF3 | H | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 473 | CF3 | H | CF3 | H | F | H | H | CF | CH | CF | CH | CH |
| 474 | CF3 | H | CF3 | F | F | H | H | N | CH | CF | CH | CF |
| 475 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 476 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 477 | Cl | H | Cl | F | F | H | H | N | CH | CF | CH | CF |
| 478 | F | F | F | H | Cl | H | H | N | CH | CF | CH | CF |
| 479 | F | F | F | H | F | H | H | N | CH | CF | CH | CF |
| 480 | Cl | H | Cl | H | F | F | H | N | CH | CF | CH | CF |

In another aspect, there is provided use of a Compound of Formula (III)




Formula (III)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof in the manufacture of a medicament for the treatment or control of a parasitic infestation of an animal as defined herein, wherein the compound is selected from the group consisting of

| # | R2 | R3 | R4 | R12 | R13 | R14 | R15 | A1 | A2 | A3 | A4 | A5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 254 | OCHF2 | H | Cl | H | Cl | H | H | CF | CH | CF | CH | CH |
| 302 | Me | F | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 303 | Me | F | CF3 | H | Cl | H | H | CF | CNH2 | CF | CH | CH |
| 317 | Cl | H | Cl | H | Cl | H | H | CH | CBr | CF | CF | CH |
| 454 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CCH3 | CH |
| 455 | Cl | H | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 456 | Cl | H | Cl | H | Cl | H | H | CF | N | CH | CH | CF |
| 457 | Cl | H | Cl | F | Me | H | H | N | CH | CF | CH | CF |
| 458 | Cl | H | Cl | H | Cl | H | H | CF | CH | CH | CH | CF |
| 460 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CH | N |
| 462 | Cl | Cl | H | H | Cl | H | H | N | CH | CF | CH | CF |
| 463 | Cl | H | Cl | H | F | H | H | N | CH | CF | CH | CF |
| 464 | Cl | H | Cl | F | Cl | H | H | N | CH | CF | CH | CF |
| 465 | Cl | H | Cl | H | H | F | H | N | CH | CF | CH | CF |
| 466 | Cl | Cl | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 467 | Cl | H | Cl | H | Cl | F | H | N | CH | CF | CH | CF |
| 468 | H | Cl | Cl | H | Me | F | H | N | CH | CF | CH | CF |
| 469 | Cl | F | Cl | H | Cl | H | H | N | CH | CF | CH | CF |
| 471 | CF3 | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 472 | CF3 | H | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 473 | CF3 | H | CF3 | H | F | H | H | CF | CH | CF | CH | CH |
| 474 | CF3 | H | CF3 | F | F | H | H | N | CH | CF | CH | CF |
| 475 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 476 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 477 | Cl | H | Cl | F | F | H | H | N | CH | CF | CH | CF |
| 478 | F | F | F | H | Cl | H | H | N | CH | CF | CH | CF |
| 479 | F | F | F | H | F | H | H | N | CH | CF | CH | CF |
| 480 | Cl | H | Cl | H | F | F | H | N | CH | CF | CH | CF |

The disclosure ~~invention~~ is also directed to a veterinary composition comprising an effective amount of a compound of Formula (I)-(XCII) as defined in any embodiment described herein and an inert carrier or formulation adjuvant. In another aspect, there is provided a veterinary composition comprising an effective amount of a compound of Formula (I) as defined herein or a compound of Formula (III) as defined herein and an inert carrier or formulation adjuvant.

The composition is suitable for use in the treatment and control of a parasitic infestation of animals such as described herein.

Suitably the veterinary composition is a topical composition, an oral composition, or an injection composition.

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows Plasma concentration of oily solution (Composition A) and volatile solution (Composition B) of compound 453.

Figure 2 shows a comparison of concentrations of Compound 453 in the blood of cattle with no CPE (Composition C) and three different CPEs (Compositions D, E, and F) showing no significant improvement with the inclusion of any CPE.

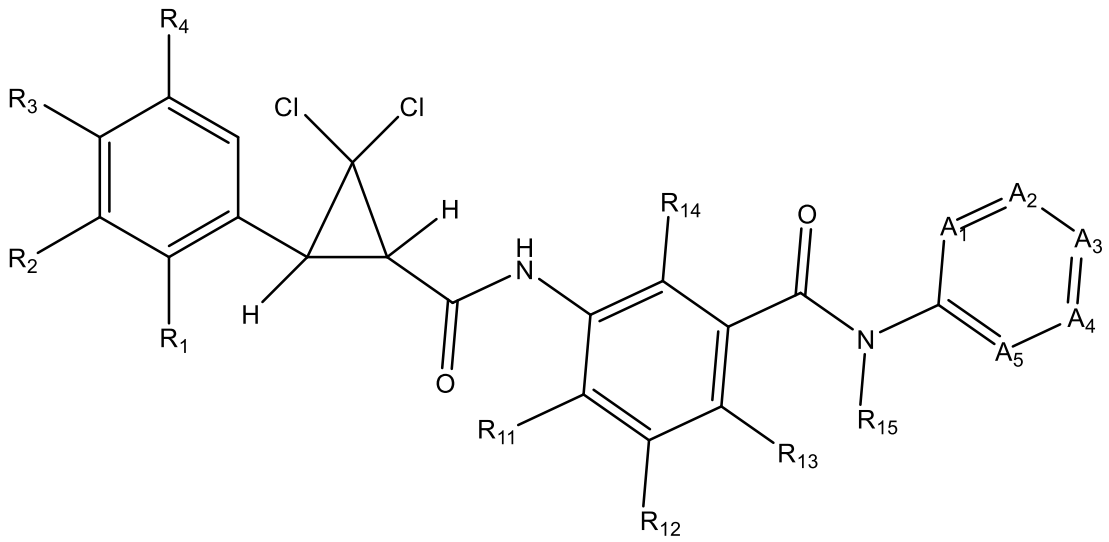
Figure 3 shows the duration of efficacy >90% against *R. microplus* and the onset of efficacy>90% against *R.microplus* for Composition G, H and Composition of Example 1.

Figure 4: Structures of the compounds 1-480.

DETAILED DESCRIPTION

Claims

1. A Compound- of Formula (I)




Formula (I)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof,

for use in ~~a method of treatment or control of a parasitic infestation of an animal~~therapy, wherein

$A_1$ is $CR_5$, N=O, or N;

$A_2$ is $CR_6$, N=O, or N;

$A_3$ is $CR_7$, N=O, or N;

$A_4$ is $CR_8$, N=O or N;

$A_5$ is $CR_9$, N=O or N;

wherein no more than 3 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ are N or N=O;

**$R^1$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^2$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^3$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**R[4]** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**R[5]** is selected from the group consisting of H, F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl($(C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$haloalkyl), N($(C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH($(C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)l$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)($(C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)($(C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$haloalkyl, NH$CH_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**R[6]** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl($(C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$haloalkyl), N($(C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH($(C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)l$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)($(C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)($(C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$haloalkyl, NH$CH_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**R[7]** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl($(C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$haloalkyl), N($(C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N($(C_1$-$C_6)$alkyl)$_2$, N(C(=O)O$(C_1$-$C_6)$alkyl)$_2$, N=CH-phenyl, NH($(C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-

$C_6$)alkyl-C(=O)l$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^8$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)l$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^9$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)l$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

or **$R^6$** and **$R^7$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=,

=N-, -NH-, -O-, -S(O)-, -$S(O)_2$- and -S-, wherein the ring formed by **$R^6$** and **$R^7$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

or **$R^7$** and **$R^8$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=, =N-, -NH-, -O-, -S(O)-, -$S(O)_2$- and -S-, wherein the ring formed by **$R^7$** and **$R^8$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

**$R^{10}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, $C_3$-$C_6$)cycloalkyl), ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)-alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)haloalkyl, $C_1$-$C_6$)alkyloxy-($C_2$-$C_6$)-alkenyl, ($C_1$-$C_6$)alkyl-($C_3$-$C_6$)cycloalkyl, heterocycle, aryl and ($C_1$-$C_6$)alkylphenyl;

**$R^{11}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^{12}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^{13}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, CHO, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$, and triazolyl;

**$R^{14}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^{15}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl**,** ($C_1$-$C_6$)alkoxy($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, and ($C_1$-$C_6$)alkoxyC(=O)($C_1$-$C_6$)alkyl

H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl**;**

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

2. A compound for use according to ~~any of the preceding~~ claim~~s~~ 1, wherein at least two of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I, more preferably F or Cl.

3. A compound for use according to ~~any of the preceding~~ claim~~s~~ 1 or 2, wherein 1 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ is N, preferably $A_1$ or $A_2$ is N.

4. A compound for use according to any of the preceding claims, wherein **$R^{12}$** is selected from the group consisting H, F, CL, $CH_3$, $CF_3$.

5. A compound for use according to any of the preceding claims, wherein **$R^{13}$** is selected from the group consisting of H, F, Cl, $CF_3$ and $CH_3$.

6. A compound for use according to any of the preceding claims, wherein **$R^{15}$** is selected from the group consisting of H and $CH_3$.

7. A compound for use according to any of the preceding claims, wherein at least one of the following selections is made:

**$R^1$** is selected from the group consisting of H F, and Cl; and/or

**$R^2$** is selected from the group consisting of H, F, and Cl; and/or

**$R^3$** is selected from the group consisting of H, F, and Cl; and/

**$R^4$** is selected from the group consisting of H, F, and Cl.

8. A compound for use according to any of the preceding claims, wherein at least one of the following selections is made:

**$R^5$** is selected from the group consisting of H F, Cl, Br, and I; and/or

**$R^6$** is selected from the group consisting of H, F, and Cl, Br, and $CH_3$; and/or

**$R^7$** is selected from the group consisting of H F, Cl, Br, and I; and/or

**$R^8$** is selected from the group consisting of H, F, Cl, and Br, and $CH_3$; and/or

**$R^9$** is selected from the group consisting of H F, Cl, Br, and I.

9. A compound for use according to any of the preceding claims, wherein:

**$R^1$** is selected from the group consisting of H F, and Cl;

**$R^2$** is selected from the group consisting of H, F, and Cl;

**$R^3$** is selected from the group consisting of H, F, and Cl;

**$R^4$** is selected from the group consisting of H, F, and Cl;

**$R^5$** is selected from the group consisting of H F, Cl, Br, and I;

**$R^6$** is selected from the group consisting of H, F, and Cl, Br, and $CH_3$;

**$R^7$** is selected from the group consisting of H F, Cl, Br, and I;

**$R^8$** is selected from the group consisting of H, F, Cl, and Br, and $CH_3$;

**$R^9$** is selected from the group consisting of H F, Cl, Br, and I;

**R**$^{11}$ is H;

**R**$^{12}$ is selected from the group consisting H, F, CL, $CH_3$, $CF_3$;

**R**$^{13}$ is selected from the group consisting of H, F, Cl, $CF_3$ and $CH_3$;

**R**$^{14}$ is H or F;

**R**$^{15}$ is selected from the group consisting of H and $CH_3$; and

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

10. A compound ~~and~~ for use according to any of the preceding claims, wherein:

**R**$^{1}$ is H;

**R**$^{2}$ is selected from the group consisting of H, F, and Cl;

**R**$^{3}$ is selected from the group consisting of H, Cl, F, and Br;

**R**$^{4}$ is H, F, Cl;

**R**$^{5}$ is selected from the group consisting of H F, and Cl;

**R**$^{6}$ is selected from the group consisting of H, F, and Cl, and $CH_3$;

**R**$^{7}$ is selected from the group consisting of H F, and Cl;

**R**$^{8}$ is selected from the group consisting of H, F, Cl, and $CH_3$;

**R**$^{9}$ is selected from the group consisting of H F, and Cl;

**R**$^{11}$ is H;

**R**$^{12}$ is selected from the group consisting H, F and Cl;

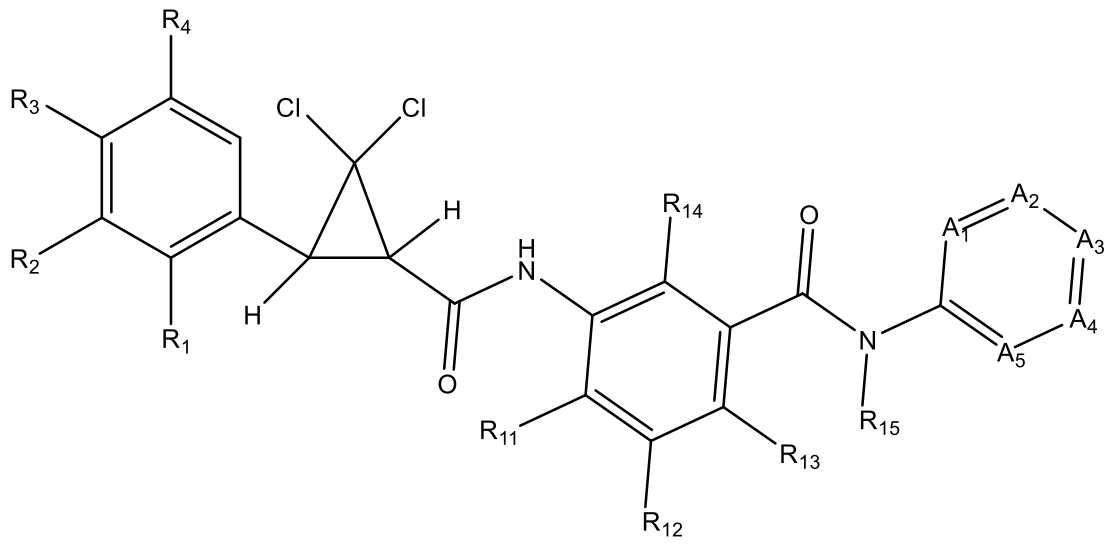
**R**$^{13}$ is selected from the group consisting of H, F, and Cl;

**R**$^{14}$ is H;

**R**$^{15}$ is selected from the group consisting of H and $CH_3$; and

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

11. Use of a Compound of Formula (I)




Formula (I)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof,

in the manufacture of a medicament for the treatment or control of a parasitic infestation of an animal, wherein

$A_1$ is $CR_5$, N=O, or N;

$A_2$ is $CR_6$, N=O, or N;

$A_3$ is $CR_7$, N=O, or N;

$A_4$ is $CR_8$, N=O or N;

$A_5$ is $CR_9$, N=O or N;

wherein no more than 3 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ are N or N=O;

**$R^1$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$;

**$R^2$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^3$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, and ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^4$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, $(C_1$-$C_6)$alkyl, $(C_3$-$C_6)$cycloalkyl, $(C_2$-$C_6)$alkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_2$-$C_6)$alkynyl, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$haloalkyl, $(C_3$-$C_6)$halocycloalkyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_1$-$C_6)$haloalkoxy, $S(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, and $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$ and S-$(Halo)_5$;

**$R^5$** is selected from the group consisting of H, F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl$)_2$, N$(C(=O)O(C_1$-$C_6)$alkyl$)_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$haloalkyl, $NHCH_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^6$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl$)_2$, N$(C(=O)O(C_1$-$C_6)$alkyl$)_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-$C_6)$alkyl-C(=O)I$R^{10}$, NH$(C_1$-$C_6)$alkyl, NH$(C_1$-$C_6)$alkenyl, NH$(C_1$-$C_6)$alkynyl, NH$(C_1$-$C_6)$alkylphenyl, NH$(S(O)_2(C_1$-$C_6)$alkyl), NH-C(=O)O$(C_1$-$C_6)$alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)$((C_1$-$C_6)$alkyl), $S(C_1$-$C_6)$alkyl, $S(C_1$-$C_6)$haloalkyl, S(O)(=NCN)$((C_1$-$C_6)$alkyl), $S(O)(C_1$-$C_6)$alkyl, $S(O)(C_1$-$C_6)$haloalkyl, $S(O)_2(C_1$-$C_6)$alkyl, $S(O)_2(C_1$-$C_6)$haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH$(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$alkyl, NH$(C_3$-$C_6)$cycloalkyl$CH_2O(C_1$-$C_6)$haloalkyl, $NHCH_2(C_3$-$C_6)$cycloalkyl, $NH_2$, $NO_2$, oxo, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkoxy, and C(=O)O-$(C_1$-$C_6)$alkyl;

**$R^7$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, $(C_1$-$C_6)$alkoxy, $(C_1$-$C_6)$alkyl, $(C_1$-$C_6)$alkylphenyl, $(C_1$-$C_6)$alkyl-$S(O)_2NH_2$, $(C_1$-$C_6)$haloalkoxy, $(C_1$-$C_6)$haloalkyl, $(C_1$-$C_6)$haloalkyl-$S(O)_2NH_2$, $(C_2$-$C_6)$alkenyl, $(C_2$-$C_6)$alkynyl, $(C_2$-$C_6)$haloalkenyl, $(C_3$-$C_6)$cycloalkenyl, $(C_3$-$C_6)$cycloalkyl, $(C_3$-$C_6)$halocycloalkenyl, $(C_3$-$C_6)$halocycloalkyl, $(C_1$-$C_6)$alkyl$((C_1$-$C_6)$alkyl)(=NO$(C_1$-$C_6)$alkyl), C(=NO$(C_1$-$C_6)$alkyl)$(C_1$-$C_6)$alkyl, C(=O)$(C_1$-$C_6)$alkyl, C(=O)NH$(C_1$-$C_6)$alkyl, C(=O)NHphenyl, C(=O)O$(C_1$-$C_6)$alkyl, CH(=NO$(C_1$-$C_6)$alkyl), imidazolyl, N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)C(=O)$(C_1$-$C_6)$alkyl-O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl)(C(=O)$(C_1$-$C_6)$haloalkyl), N$((C_1$-$C_6)$alkyl)C(=O)O$(C_1$-$C_6)$alkyl), N$((C_1$-$C_6)$alkyl$)_2$, N$(C(=O)O(C_1$-$C_6)$alkyl$)_2$, N=CH-phenyl, NH$((C_1$-$C_6)$alkylC(=O)$(C_1$-$C_6)$alkyl), NHC(=O)$R^{10}$, N$(C_1$-

$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^8$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

**$R^9$** is selected from the group consisting of F, Cl, Br, I, H, CN, CHO, NHOH, NO, $NO_2$, OH, $NH_2$, =O, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkylphenyl, ($C_1$-$C_6$)alkyl-$S(O)_2NH_2$, ($C_1$-$C_6$)haloalkoxy, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)haloalkyl-$S(O)_2NH_2$, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_3$-$C_6$)cycloalkyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_3$-$C_6$)halocycloalkyl, ($C_1$-$C_6$)alkyl(($C_1$-$C_6$)alkyl)(=NO($C_1$-$C_6$)alkyl), C(=NO($C_1$-$C_6$)alkyl)($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, C(=O)NH($C_1$-$C_6$)alkyl, C(=O)NHphenyl, C(=O)O($C_1$-$C_6$)alkyl, CH(=NO($C_1$-$C_6$)alkyl), imidazolyl, N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)alkyl-O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)(C(=O)($C_1$-$C_6$)haloalkyl), N(($C_1$-$C_6$)alkyl)(C(=O)O($C_1$-$C_6$)alkyl), N(($C_1$-$C_6$)alkyl)$_2$, N(C(=O)O($C_1$-$C_6$)alkyl)$_2$, N=CH-phenyl, NH(($C_1$-$C_6$)alkylC(=O)($C_1$-$C_6$)alkyl), NHC(=O)$R^{10}$, N($C_1$-$C_6$)alkyl-C(=O)I$R^{10}$, NH($C_1$-$C_6$)alkyl, NH($C_1$-$C_6$)alkenyl, NH($C_1$-$C_6$)alkynyl, NH($C_1$-$C_6$)alkylphenyl, NH($S(O)_2$($C_1$-$C_6$)alkyl), NH-C(=O)O($C_1$-$C_6$)alkyl, oxazolyl, phenyl, pyrazolyl, pyridinyl, S(=NCN)(($C_1$-$C_6$)alkyl), S($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)(=NCN)(($C_1$-$C_6$)alkyl), S(O)($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)haloalkyl, $S(O)_2$($C_1$-$C_6$)alkyl, $S(O)_2$($C_1$-$C_6$)haloalkyl, SCN, thiazolyl, thienyl, and triazolyl,

wherein each alkoxy, alkyl, haloalkoxy, haloalkyl, alkenyl, alkynyl, haloalkenyl, cycloalkenyl, cycloalkyl, halocycloalkenyl, halocycloalkyl, imidazolyl, phenyl, pyrazolyl, pyridinyl, thiazolyl, thienyl, and triazolyl, may be optionally substituted with one or more substituents selected from the group consisting of F, Cl, Br, I, CN, OH, NH($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)alkyl, NH($C_3$-$C_6$)cycloalkyl$CH_2$O($C_1$-$C_6$)haloalkyl, NH$CH_2$($C_3$-$C_6$)cycloalkyl, $NH_2$, $NO_2$, oxo, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkyl, ($C_1$-$C_6$)alkoxy, and C(=O)O-($C_1$-$C_6$)alkyl;

or **$R^6$** and **$R^7$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=,

=N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^6$** and **R$^7$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

or **R$^7$** and **R$^8$** together with the atoms to which they are attached form a 5 or 6- atoms containing ring, wherein the ring-forming atoms are selected from the group consisting of -$CH_2$-, -CH=, =CH-,-N=, =N-, -NH-, -O-, -S(O)-, -S(O)$_2$- and -S-, wherein the ring formed by **R$^7$** and **R$^8$** is optionally substituted with one or more substituents of selected from the group consisting of ($C_1$-$C_3$)alkyl, F, Cl, Br, I, CN, $NO_2$, and =O;

**R$^{10}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, $C_3$-$C_6$)cycloalkyl), ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)-alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyloxy-($C_1$-$C_6$)haloalkyl, $C_1$-$C_6$)alkyloxy-($C_2$-$C_6$)-alkenyl, ($C_1$-$C_6$)alkyl-($C_3$-$C_6$)cycloalkyl, heterocycle, aryl and ($C_1$-$C_6$)alkylphenyl;

**R$^{11}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{12}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{13}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, CHO, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$, and triazolyl;

**R$^{14}$** is selected from the group consisting of H, F, Cl, Br, I, CN, $NH_2$, $NO_2$, ($C_1$-$C_6$)alkyl, ($C_3$-$C_6$)cycloalkyl, ($C_2$-$C_6$)alkenyl, ($C_3$-$C_6$)cycloalkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)alkoxy, ($C_1$-$C_6$)haloalkyl, ($C_3$-$C_6$)halocycloalkyl, ($C_2$-$C_6$)haloalkenyl, ($C_3$-$C_6$)halocycloalkenyl, ($C_1$-$C_6$)haloalkoxy, S($C_1$-$C_6$)alkyl, S(O)($C_1$-$C_6$)alkyl, S(O)$_2$($C_1$-$C_6$)alkyl, S($C_1$-$C_6$)haloalkyl, S(O)($C_1$-$C_6$)haloalkyl, S(O)$_2$($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkyl-S(O)$_2$$NH_2$, and ($C_1$-$C_6$)haloalkyl-S(O)$_2$$NH_2$;

**R$^{15}$** is selected from the group consisting of H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl, ($C_1$-$C_6$)alkoxy($C_1$-$C_6$)alkyl, C(=O)($C_1$-$C_6$)alkyl, and ($C_1$-$C_6$)alkoxyC(=O)($C_1$-$C_6$)alkyl

H, ($C_1$-$C_6$)alkyl, ($C_2$-$C_6$)alkenyl, ($C_2$-$C_6$)alkynyl, ($C_1$-$C_6$)haloalkyl;

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

12. A use according to claim 11, wherein at least two of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I, more preferably F or Cl.

13. A use according to claim 11 or 12, wherein 1 of $A_1$, $A_2$, $A_3$, $A_4$, $A_5$ is N, preferably $A_1$ or $A_2$ is N.

14. A use according to any of claims 11 to 13, wherein **$R^{12}$** is selected from the group consisting H, F, CL, $CH_3$, $CF_3$.

15. A use according to any of claims 11 to 14, wherein **$R^{13}$** is selected from the group consisting of H, F, Cl, $CF_3$ and $CH_3$.

16. A use according to any of claims 11 to 15, wherein **$R^{15}$** is selected from the group consisting of H and $CH_3$.

17. A use according to any of claims 11 to 16, wherein at least one of the following selections is made:

**$R^1$** is selected from the group consisting of H F, and Cl; and/or

**$R^2$** is selected from the group consisting of H, F, and Cl; and/or

**$R^3$** is selected from the group consisting of H, F, and Cl; and/

**$R^4$** is selected from the group consisting of H, F, and Cl.

18. A use according to any of claims 11 to 17, wherein at least one of the following selections is made:

**$R^5$** is selected from the group consisting of H F, Cl, Br, and I; and/or

**$R^6$** is selected from the group consisting of H, F, and Cl, Br, and $CH_3$; and/or

**$R^7$** is selected from the group consisting of H F, Cl, Br, and I; and/or

**$R^8$** is selected from the group consisting of H, F, Cl, and Br, and $CH_3$; and/or

**$R^9$** is selected from the group consisting of H F, Cl, Br, and I.

19. A use according to any of claims 11 to 18, wherein:

**$R^1$** is selected from the group consisting of H F, and Cl;

**$R^2$** is selected from the group consisting of H, F, and Cl;

**$R^3$** is selected from the group consisting of H, F, and Cl;

**$R^4$** is selected from the group consisting of H, F, and Cl;

**$R^5$** is selected from the group consisting of H F, Cl, Br, and I;

**$R^6$** is selected from the group consisting of H, F, and Cl, Br, and $CH_3$;

**$R^7$** is selected from the group consisting of H F, Cl, Br, and I;

**$R^8$** is selected from the group consisting of H, F, Cl, and Br, and $CH_3$;

**$R^9$** is selected from the group consisting of H F, Cl, Br, and I;

$R^{11}$ is H;

$R^{12}$ is selected from the group consisting H, F, CL, $CH_3$, $CF_3$;

$R^{13}$ is selected from the group consisting of H, F, Cl, $CF_3$ and $CH_3$;

$R^{14}$ is H or F;

$R^{15}$ is selected from the group consisting of H and $CH_3$; and

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

20. A use according to any of claims 11 to 19, wherein:

$R^1$ is H;

$R^2$ is selected from the group consisting of H, F, and Cl;

$R^3$ is selected from the group consisting of H, Cl, F, and Br;

$R^4$ is H, F, Cl;

$R^5$ is selected from the group consisting of H F, and Cl;

$R^6$ is selected from the group consisting of H, F, and Cl, and $CH_3$;

$R^7$ is selected from the group consisting of H F, and Cl;

$R^8$ is selected from the group consisting of H, F, Cl, and $CH_3$;

$R^9$ is selected from the group consisting of H F, and Cl;

$R^{11}$ is H;

$R^{12}$ is selected from the group consisting H, F and Cl;

$R^{13}$ is selected from the group consisting of H, F, and Cl;

$R^{14}$ is H;

$R^{15}$ is selected from the group consisting of H and $CH_3$; and

wherein at least one of $R^5$, $R^6$, $R^7$, $R^8$, $R^9$, is a substituent selected from the group consisting of F, Cl, Br, and I.

~~11~~21. A ~~Compound for~~ use according to any of ~~the preceding~~ claims 11 to 20, wherein the parasitic infestation is an ectoparasite infestation.

~~12~~22. A ~~Compound for~~ use according to any of ~~the preceding~~ claims 11 to 21, wherein the parasitic infestation is an acaracide infestation.

~~13~~23. A ~~Compound for~~ use according to any of ~~the preceding~~ claims 11 to 22, wherein the parasitic infestation is an infestation selected from tick, flea and/or fly, preferably a tick infestation.

~~14~~24. ~~A Compound for~~ use according to any of ~~the preceding~~ claims 11 to 23, wherein the parasite is a one host tick or a multi-host tick, preferably the parasite is *Rhipicephalus microplus*.

~~15~~25. ~~A Compound for~~ use according to any of ~~the preceding~~ claims 1 to 24, wherein the animal is a warm-blooded animal, especially a mammal.

~~16~~26. ~~A Compound for~~ use according to any of ~~the~~ claims ~~1-15~~11 to 25, wherein the animal is a livestock animal, especially ruminant, especially a bovine animal, especially cattle.

~~17~~27. ~~A Compound for~~ use according to any of ~~the~~ claims ~~1-15~~11 to 25, wherein the animal is a fish, and the parasitic infestation is a sea lice infestation.

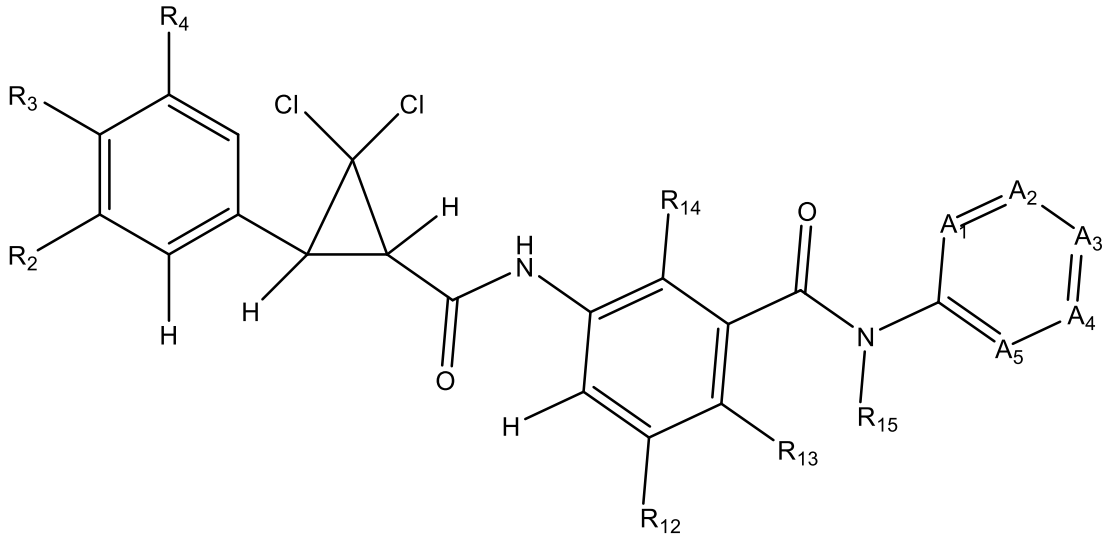
~~18~~28. ~~A Compound for~~ use according to any of claims ~~1-15~~11 to 25, wherein the animal is a companion animal, especially canine animal or a feline animal, especially a dog or cat.

~~19~~29. ~~A Compound for~~ use according to any of ~~the preceding~~ claims 11 to 28, wherein the animal is protected from a parasite infestation.

~~20~~30. ~~A Compound for~~ use according to any of ~~the preceding~~ claims 11 to 29, wherein an existing parasite infestation of the animal is treated or controlled.

~~21~~31. ~~A Compound for~~ use according to any of ~~the preceding~~ claims 11 to 30, wherein the ~~method comprises administering the~~ compound is to be administered to ~~an~~ the animal weekly, bi-weekly, monthly, every 6 weeks, every 2 months , every 3 months, 6 months or 9 months.

~~22~~32. A Compound~~-~~ of Formula (III)



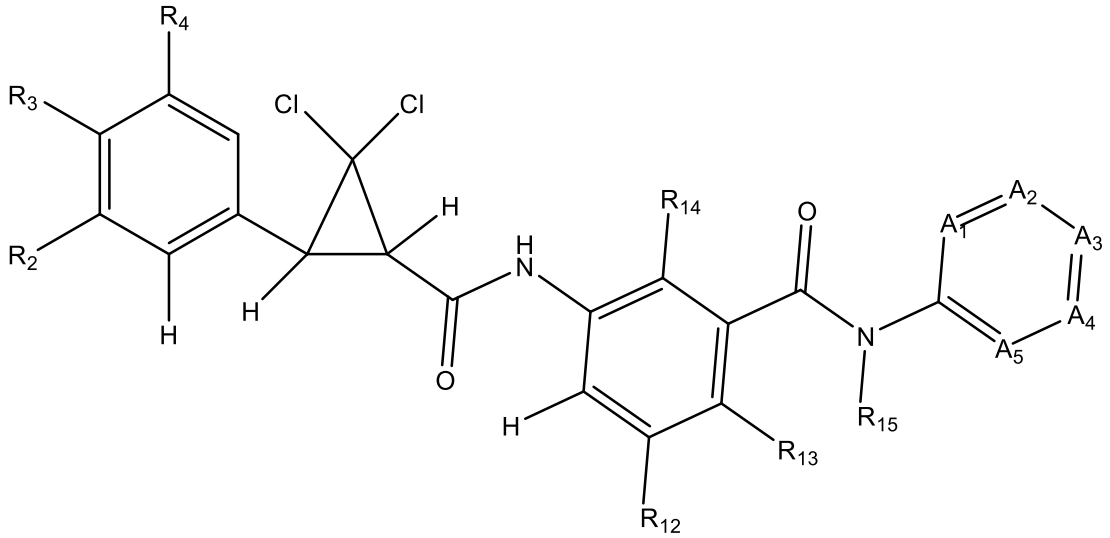

Formula (III)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof for use in therapy as defined in any of claims 1 to 10, wherein the compound is selected from the group consisting of

| # | R2 | R3 | R4 | R12 | R13 | R14 | R15 | A1 | A2 | A3 | A4 | A5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 254 | OCHF2 | H | Cl | H | Cl | H | H | CF | CH | CF | CH | CH |
| 302 | Me | F | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 303 | Me | F | CF3 | H | Cl | H | H | CF | CNH2 | CF | CH | CH |
| 317 | Cl | H | Cl | H | Cl | H | H | CH | CBr | CF | CF | CH |
| 454 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CCH3 | CH |
| 455 | Cl | H | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 456 | Cl | H | Cl | H | Cl | H | H | CF | N | CH | CH | CF |
| 457 | Cl | H | Cl | F | Me | H | H | N | CH | CF | CH | CF |
| 458 | Cl | H | Cl | H | Cl | H | H | CF | CH | CH | CH | CF |
| 460 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CH | N |
| 462 | Cl | Cl | H | H | Cl | H | H | N | CH | CF | CH | CF |
| 463 | Cl | H | Cl | H | F | H | H | N | CH | CF | CH | CF |
| 464 | Cl | H | Cl | F | Cl | H | H | N | CH | CF | CH | CF |
| 465 | Cl | H | Cl | H | H | F | H | N | CH | CF | CH | CF |
| 466 | Cl | Cl | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 467 | Cl | H | Cl | H | Cl | F | H | N | CH | CF | CH | CF |
| 468 | H | Cl | Cl | H | Me | F | H | N | CH | CF | CH | CF |
| 469 | Cl | F | Cl | H | Cl | H | H | N | CH | CF | CH | CF |
| 471 | CF3 | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 472 | CF3 | H | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 473 | CF3 | H | CF3 | H | F | H | H | CF | CH | CF | CH | CH |
| 474 | CF3 | H | CF3 | F | F | H | H | N | CH | CF | CH | CF |
| 475 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 476 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 477 | Cl | H | Cl | F | F | H | H | N | CH | CF | CH | CF |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 478 | F | F | F | H | Cl | H | H | N | CH | CF | CH | CF |
| 479 | F | F | F | H | F | H | H | N | CH | CF | CH | CF |
| 480 | Cl | H | Cl | H | F | F | H | N | CH | CF | CH | CF |

33. Use of a Compound of Formula (III)




Formula (III)

and N-oxides, veterinary acceptable acid addition salts, salt derivatives, solvates, ester derivatives, crystal polymorphs, isotopes, stereoisomers, and tautomers thereof in the manufacture of a medicament for the treatment or control of a parasitic infestation of an animal as defined in any one of claims 11 to 31, wherein the compound is selected from the group consisting of

| # | R2 | R3 | R4 | R12 | R13 | R14 | R15 | A1 | A2 | A3 | A4 | A5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 254 | OCHF2 | H | Cl | H | Cl | H | H | CF | CH | CF | CH | CH |
| 302 | Me | F | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 303 | Me | F | CF3 | H | Cl | H | H | CF | CNH2 | CF | CH | CH |
| 317 | Cl | H | Cl | H | Cl | H | H | CH | CBr | CF | CF | CH |
| 454 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CCH3 | CH |
| 455 | Cl | H | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 456 | Cl | H | Cl | H | Cl | H | H | CF | N | CH | CH | CF |
| 457 | Cl | H | Cl | F | Me | H | H | N | CH | CF | CH | CF |
| 458 | Cl | H | Cl | H | Cl | H | H | CF | CH | CH | CH | CF |
| 460 | Cl | H | Cl | H | Cl | H | H | N | CH | CF | CH | N |
| 462 | Cl | Cl | H | H | Cl | H | H | N | CH | CF | CH | CF |
| 463 | Cl | H | Cl | H | F | H | H | N | CH | CF | CH | CF |
| 464 | Cl | H | Cl | F | Cl | H | H | N | CH | CF | CH | CF |
| 465 | Cl | H | Cl | H | H | F | H | N | CH | CF | CH | CF |
| 466 | Cl | Cl | Cl | H | Cl | H | H | CH | N | CF | CH | CF |
| 467 | Cl | H | Cl | H | Cl | F | H | N | CH | CF | CH | CF |
| 468 | H | Cl | Cl | H | Me | F | H | N | CH | CF | CH | CF |
| 469 | Cl | F | Cl | H | Cl | H | H | N | CH | CF | CH | CF |
| 471 | CF3 | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 472 | CF3 | H | CF3 | H | Cl | H | H | CF | CH | CF | CH | CH |
| 473 | CF3 | H | CF3 | H | F | H | H | CF | CH | CF | CH | CH |
| 474 | CF3 | H | CF3 | F | F | H | H | N | CH | CF | CH | CF |
| 475 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 476 | Cl | H | CF3 | H | Cl | H | H | N | CH | CF | CH | CF |
| 477 | Cl | H | Cl | F | F | H | H | N | CH | CF | CH | CF |
| 478 | F | F | F | H | Cl | H | H | N | CH | CF | CH | CF |
| 479 | F | F | F | H | F | H | H | N | CH | CF | CH | CF |
| 480 | Cl | H | Cl | H | F | F | H | N | CH | CF | CH | CF |

~~23~~34. A veterinary composition comprising an effective amount of a compound of Formula (I) as defined in any of claims 1-~~10~~ 31 or a compound of Formula (III) as defined in claim 32 or 33~~22~~ and an inert carrier or formulation adjuvant.

~~24~~35. The veterinary composition according to claim ~~23~~34, wherein the veterinary composition is a topical composition, an oral composition, or an injection composition.

~~25~~36. The veterinary composition according to claim ~~23~~34 or ~~24~~ 35 and a pharmaceutically acceptable oily carrier.

~~26~~37. The veterinary composition according to claim ~~25~~ 36 wherein the oily carrier comprises a fatty acid ester, preferably essentially consist of a fatty acid ester.

~~27~~38. The veterinary pharmaceutical composition according to claim ~~26~~37, wherein the fatty acid ester is a glycol diester or a glycerol triester of a $C_{8-10}$ fatty acid, preferably propylene glycol octanoate decanoate (e.g. Miglyol 840).

~~28~~39. The veterinary pharmaceutical composition according to claim ~~25~~36, wherein the oily carrier comprises a combination of glycerol monocaprylate and propylene glycol dicaprylocaprate.

~~29~~40. The veterinary pharmaceutical composition according to any one of claims ~~23~~ 34 to ~~28~~39, wherein the composition does not comprise a penetration enhancer.

~~30~~41. The veterinary pharmaceutical composition according to any one of claims ~~23~~ 34 to ~~29~~40, comprising:

a) from about 0.5% to about 10% w/v, preferably 1% of the compound of Formula (I);

b1) from about 90% to 99.9% w/v of preferably propylene glycol octanoate decanoate; or alternatively

b2) from about 10% to about 40% w/v, preferably 20% of glycerol monocaprylate; and

c) optionally, from about 2% to about 50% w/v, preferably 99%- of propylene glycol dicaprylocaprate.