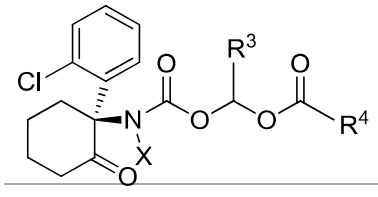
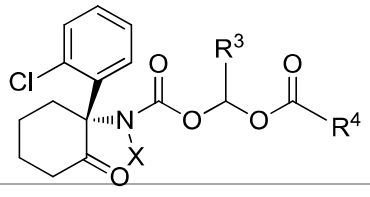
Claims

1. A compound having the structure of Formula (IVa) or (IVb):



(IVa)

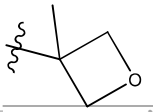


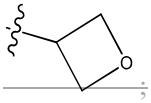
(IVb)

or a pharmaceutically acceptable salt thereof, wherein,

R^3 is selected from hydrogen and C_{1-6} alkyl;

X is $-CH_3$; and

R^4 is selected from amino C_{1-6} alkyl, $R^{4a}NHCOR^{4b}$, C_{1-6} heterocyclyl, substituted C_{1-6} alkyl, substituted amino C_{1-6} alkyl, and substituted C_{1-6} heterocyclyl, wherein the substituent group is selected from C_{1-6} alkyl, NH_2, oxo(=O), C_{1-6} hydroxyalkyl, 

, and 

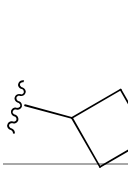
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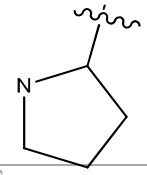
R^{4a} is C_{1-6} alkylene; and

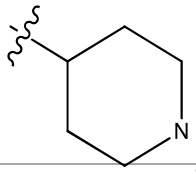
R^{4b} is selected from C_{1-6} alkyl and C_{1-6} haloalkyl.

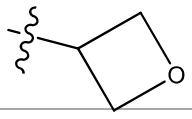
2. The compound of claim 1, wherein R^4 is selected from C_{1-6} heterocyclyl, andsubstituted C_{1-6} heterocyclyl.

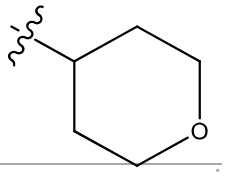
3. The compound of claim 1, wherein the C_{1-6} heterocyclyl is selected from:



, 

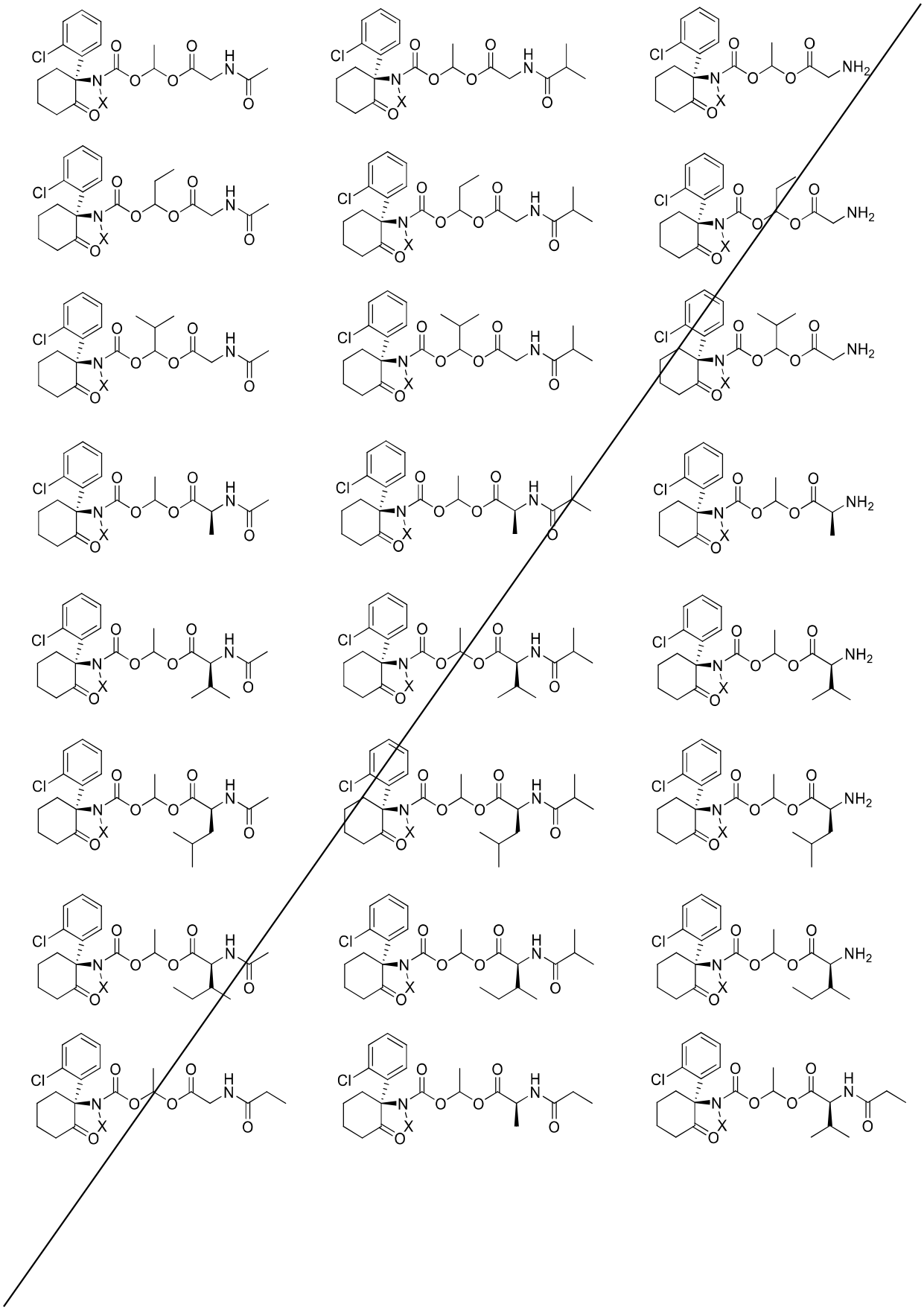
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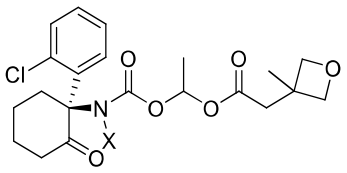
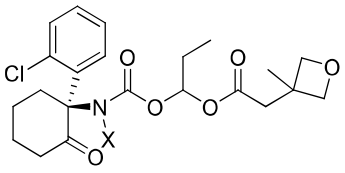
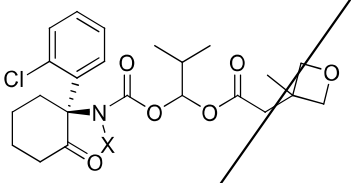
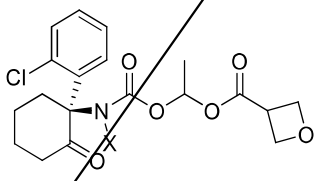
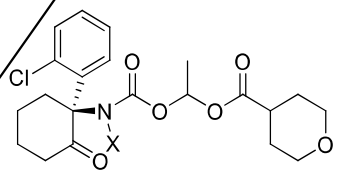
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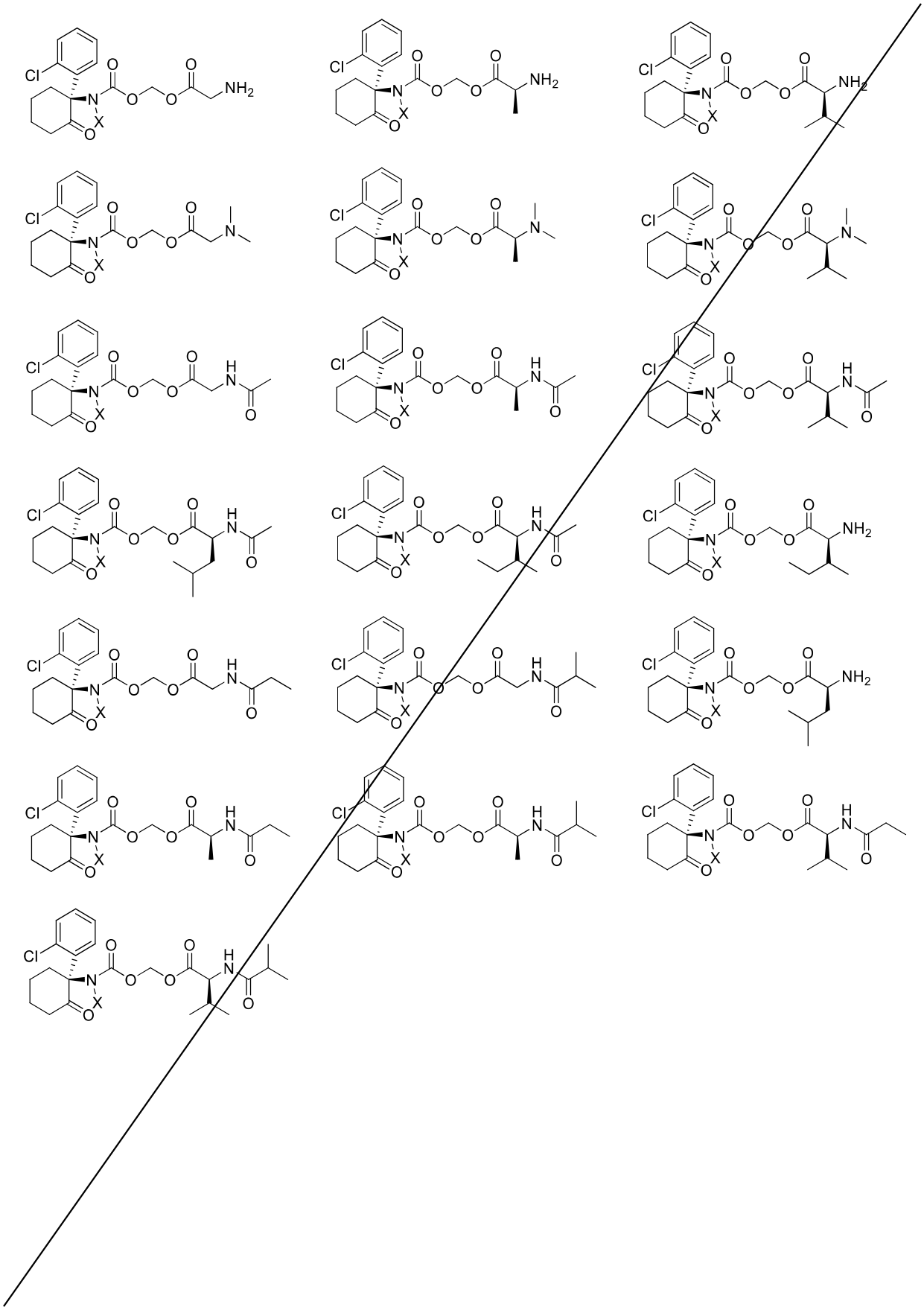
, and 

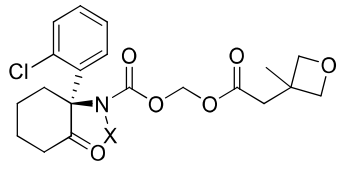
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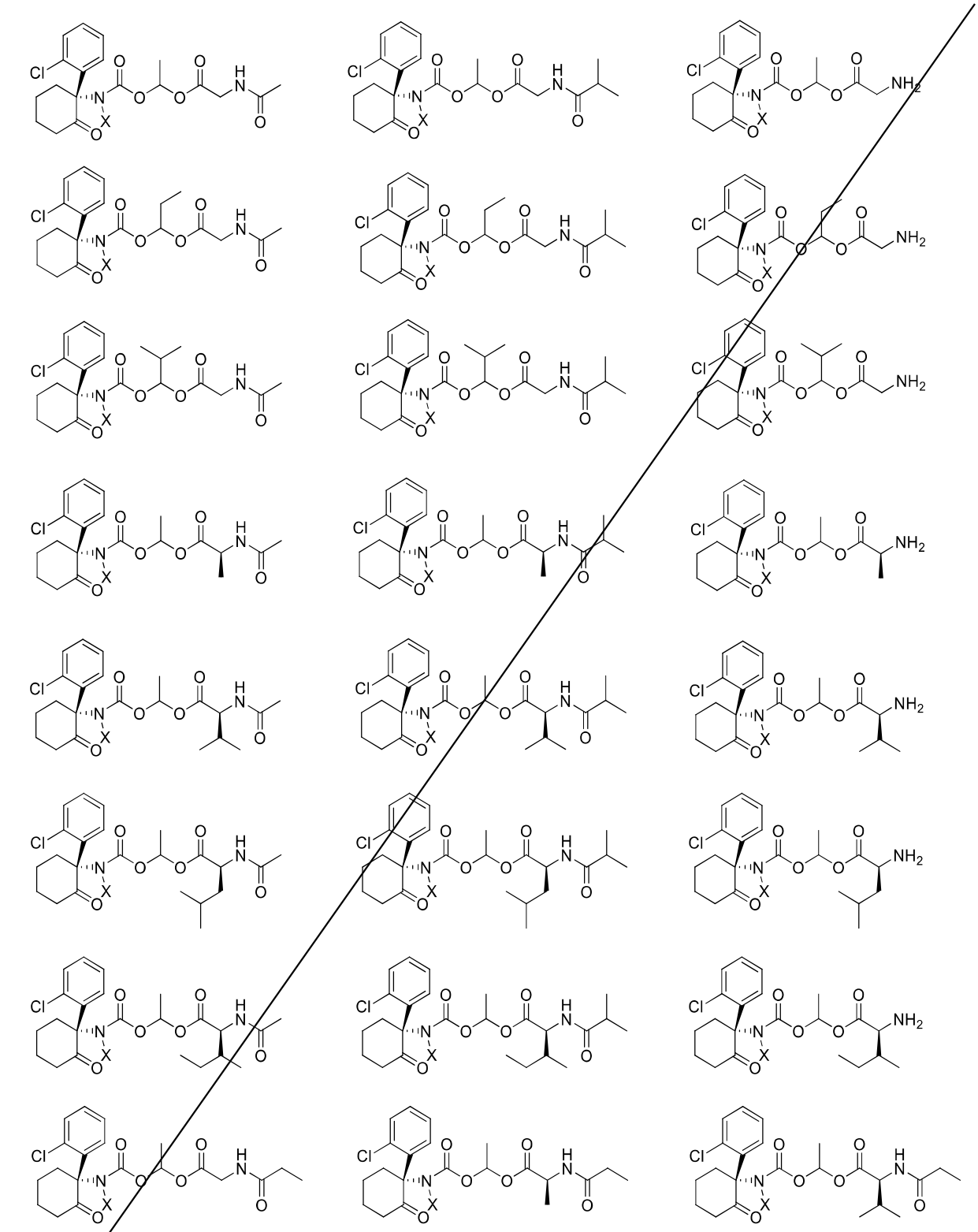
4. The compound of claim 1, wherein the compound is selected from:

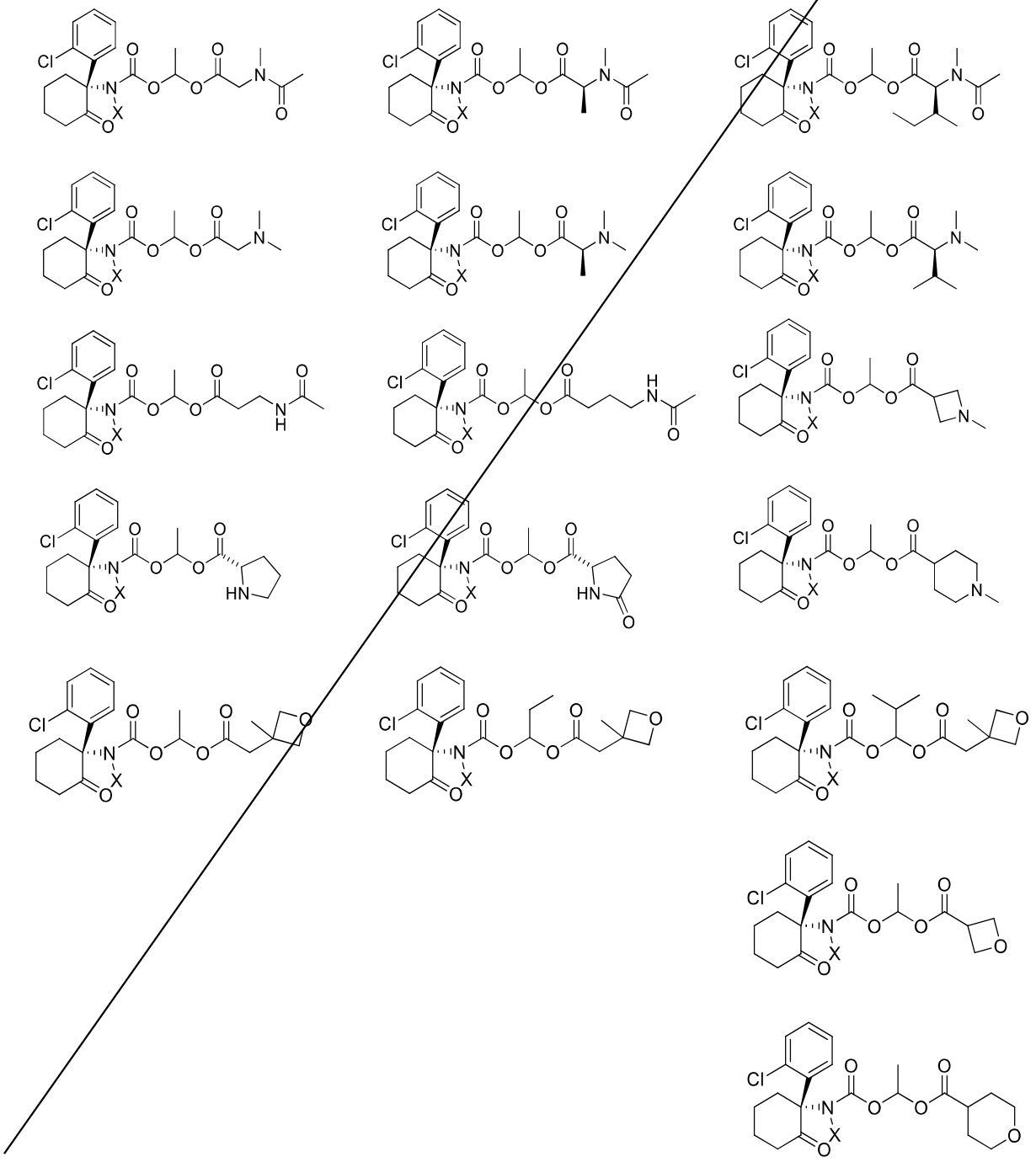


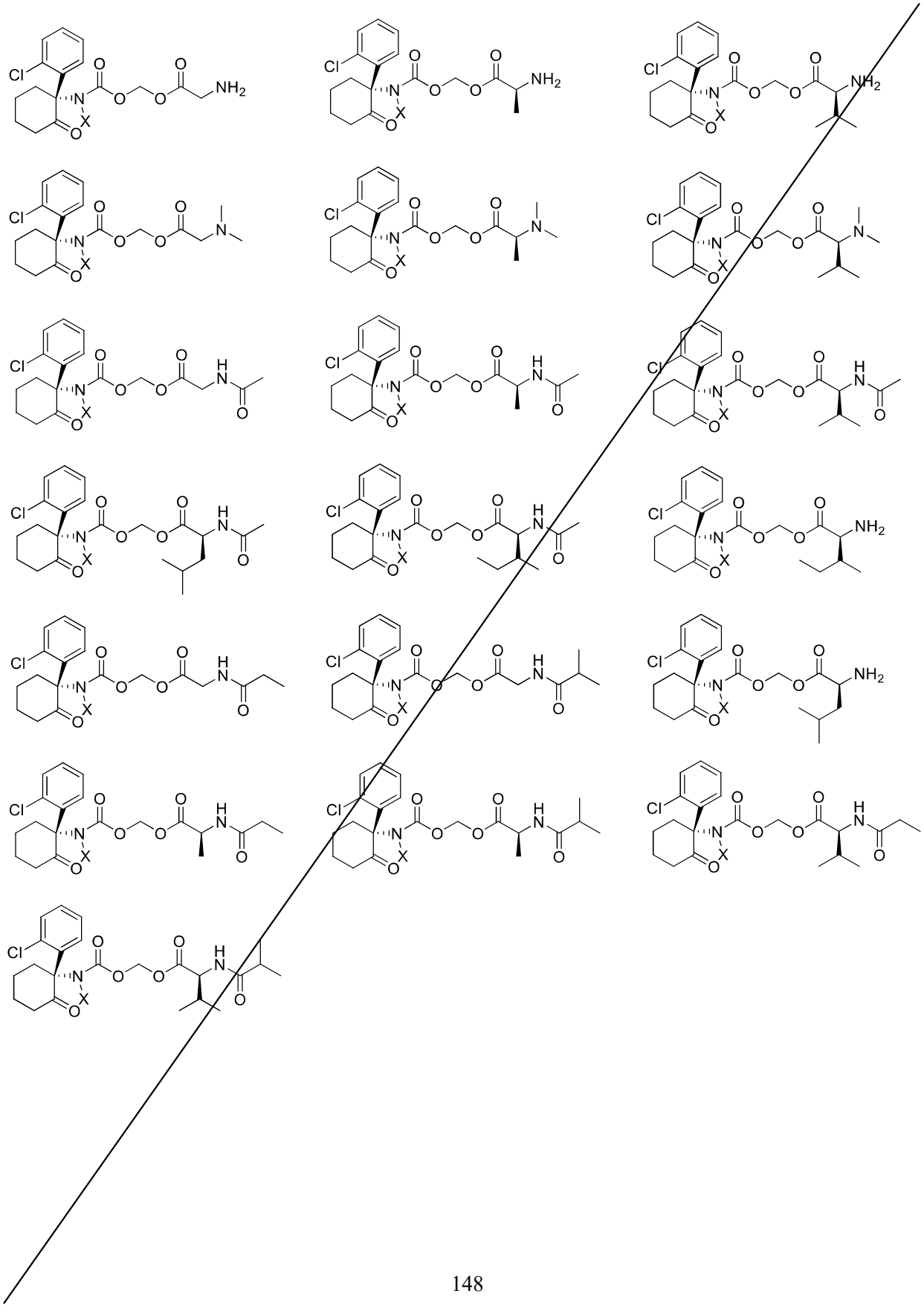






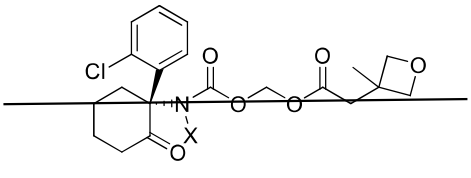



Cl
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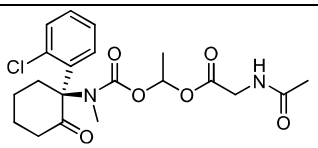
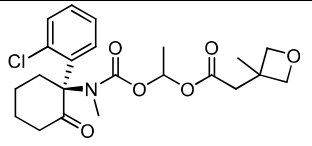


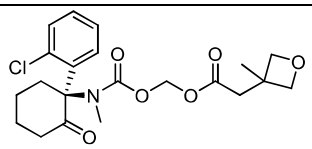
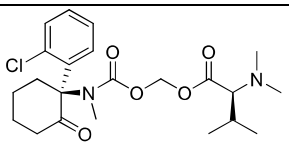
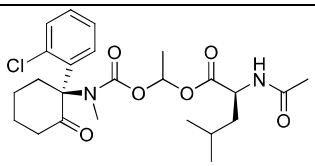
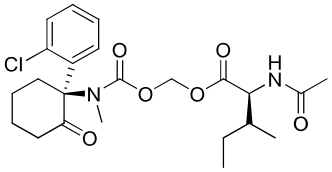




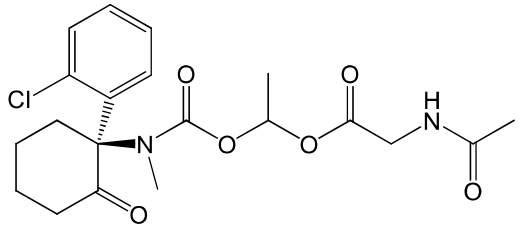
~~wherein X is CH_3.~~

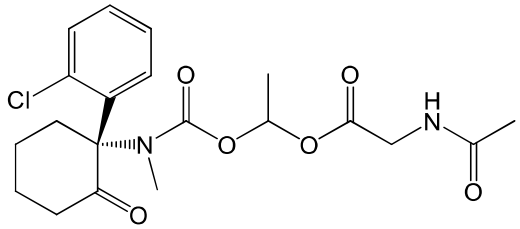
~~5~~1. ~~The~~ A compound ~~of claim 1~~, wherein the compound is selected from A-3, A-4, ~~A-12,~~ A-20, ~~A-27,~~ A-37, ~~A-51,~~ A-55, and A-58, or an enantiomer of any of the foregoing, or a pharmaceutically acceptable salt of any of the foregoing:

A-3	
A-4	

A-20	
A-37	
A-55	
A-58	

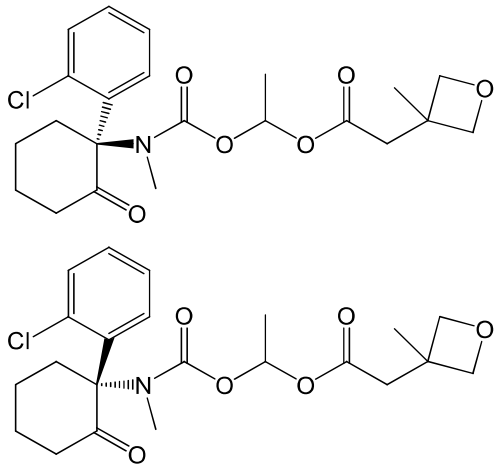
~~62~~2. The compound of claim 1, wherein the compound is: selected from 1-((((*S*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetylglycinate (A-3) and 1-((((*R*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetylglycinate (A-60):





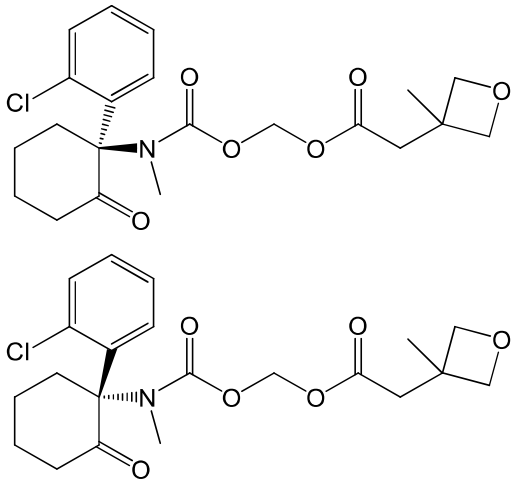
or a pharmaceutically acceptable salt thereof.

~~73~~. The compound of claim 1, wherein the compound is selected from 1-((((*S*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl 2-(3-methyloxetan-3-yl)acetate (A-4) and 1-((((*R*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl 2-(3-methyloxetan-3-yl)acetate (A-61):



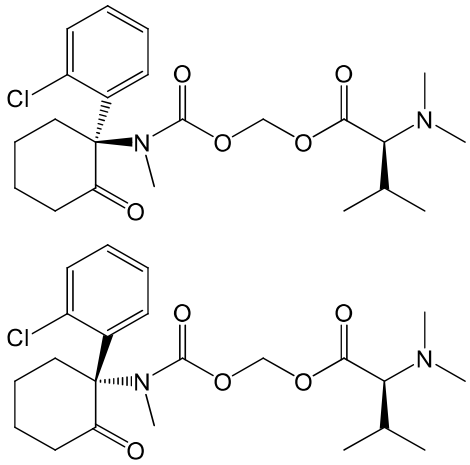
or a pharmaceutically acceptable salt thereof.

~~84~~. The compound of claim 1, wherein the compound is selected from (*S*)-(((1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)methyl 2-(3-methyloxetan-3-yl)acetate (A-20) and (*R*)-(((1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)methyl 2-(3-methyloxetan-3-yl)acetate (A-64):



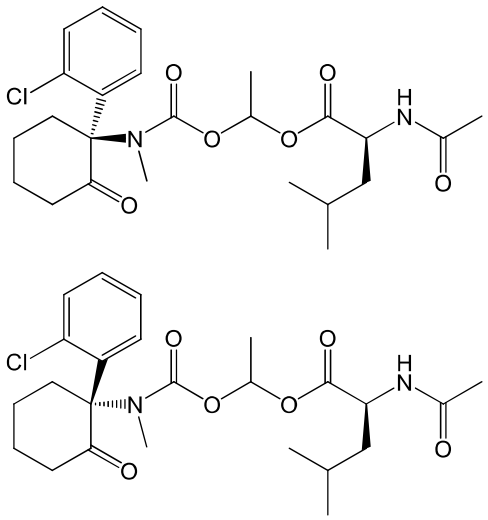
or a pharmaceutically acceptable salt thereof.

~~95~~. The compound of claim 1, wherein the compound is selected from ((((*S*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)methyl dimethyl-*L*-valinate (A-37) and ((((*R*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)methyl dimethyl-*L*-valinate (A-67):



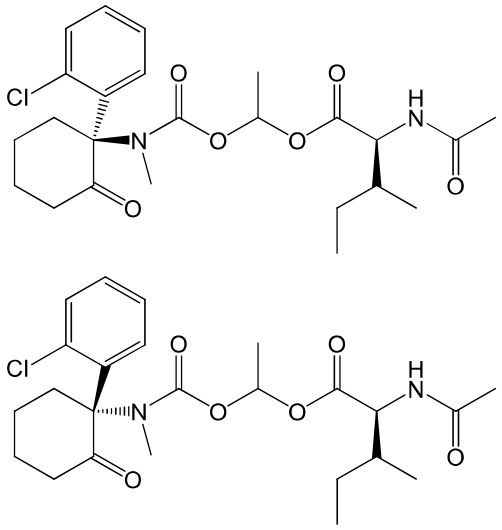
or a pharmaceutically acceptable salt thereof.

~~106~~. The compound of claim 1, wherein the compound is selected from 1-((((S)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetyl-L-leucinate (A-55) and 1-((((R)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetyl-L-leucinate ~~(A-59)~~:



or a pharmaceutically acceptable salt thereof.

~~117~~. The compound of claim 1, wherein the compound is selected from 1-((((*S*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetyl-L-alloisoleucinate (A-58) and 1-((((*R*)-1-(2-chlorophenyl)-2-oxocyclohexyl)(methyl)carbamoyl)oxy)ethyl acetyl-L-alloisoleucinate (A-70):



or a pharmaceutically acceptable salt thereof.

~~12~~8. A pharmaceutical composition comprising the compound of any one of claims 1 to ~~11~~ 7 or a pharmaceutically acceptable salt thereof.

~~13~~9. The pharmaceutical composition of claim ~~12~~8, wherein the pharmaceutical composition is an oral formulation.

~~14~~10. Use of the compound of any one of claims 1 to ~~11~~ 7 or the pharmaceutically acceptable salt thereof, or the pharmaceutical composition of any one of claims ~~12~~ 8 to ~~13~~ 9 in the manufacture of a medicament for treating pain.

~~15~~11. Use of the compound of any one of claims 1 to ~~11~~ 7 or the pharmaceutically acceptable salt thereof, or the pharmaceutical composition of any one of claims ~~12~~ 8 to ~~13~~ 9 in the manufacture of a medicament for treating depression.

~~16~~12. Use of the compound of any one of claims 1 to ~~11~~ 7 or a pharmaceutically acceptable salt thereof, or the pharmaceutical composition of any one of claims ~~12~~ 8 to ~~13~~ 9 in the manufacture of a medicament for treating a neurological disorder or disease of the central nervous system ~~associated with~~related to NMDA receptor inhibition.

~~17~~13. Use of the compound of any one of claims 1 to ~~11~~ 7 or a pharmaceutically acceptable salt thereof, or the pharmaceutical composition of any one of claims ~~12~~ 8 to ~~13~~ 9 in the manufacture of a

medicament for treating a psychiatric disorder or disease of the central nervous system ~~associated with~~related to NMDA receptor inhibition.