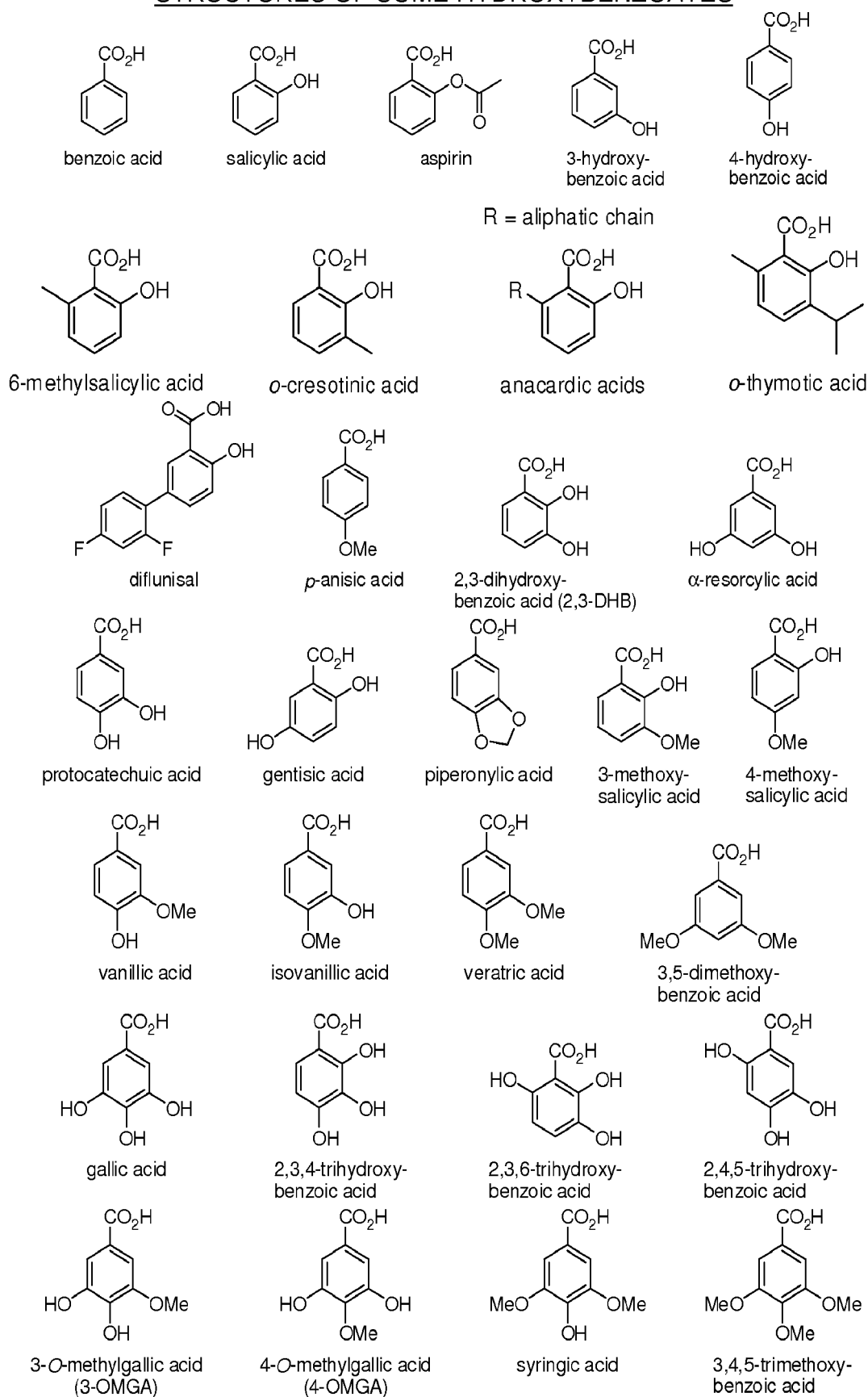
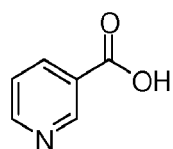


FIGURE 1
STRUCTURES OF SOME HYDROXYBENZOATES

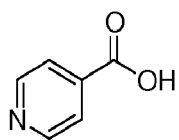


2/24

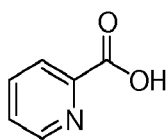
FIGURE 2
STRUCTURES OF SOME HETEROARYL CARBOXYLIC ACIDS



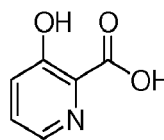
nicotinic acid



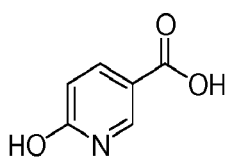
isonicotinic acid



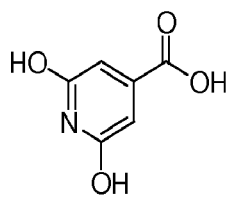
picolinic acid



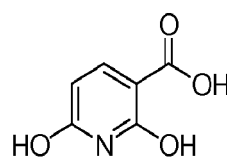
3-hydroxypicolinic acid



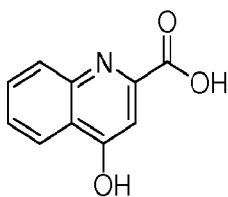
6-hydroxynicotinic acid



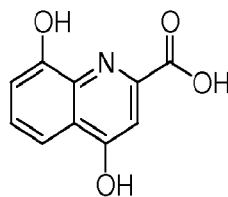
citrazinic acid



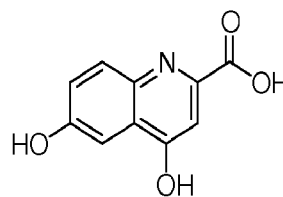
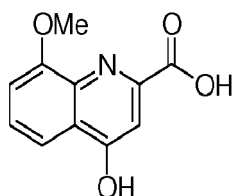
2,6-dihydroxynicotinic acid



kynurenic acid



xanthurenic acid

6-hydroxy-
kynurenic acid

8-methoxykynurenic acid

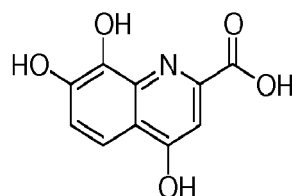
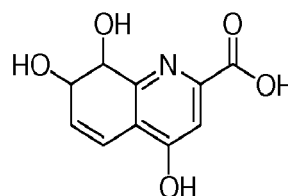
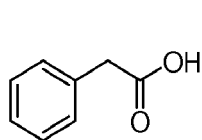
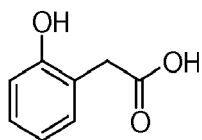
7,8-dihydroxy-
kynurenic acid7,8-dihydro-7,8-di-
hydroxykynurenic acid

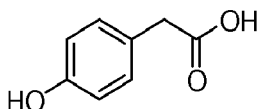
FIGURE 3
STRUCTURES OF SOME PHENYLACETATES



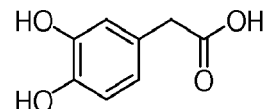
phenylacetic acid
(hydratropic acid)



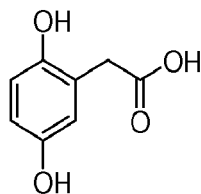
2-hydroxyphenyl-
acetic acid



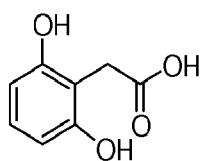
4-hydroxyphenyl-
acetic acid



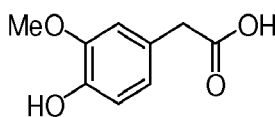
homoprotocatechuic acid



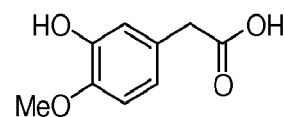
homogentisic acid



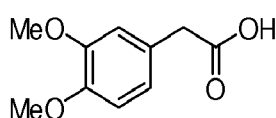
2,6-dihydroxy-
phenylacetic acid



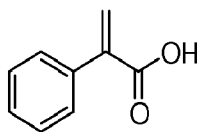
homovanillic acid



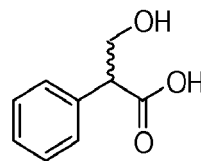
homoisovanillic acid



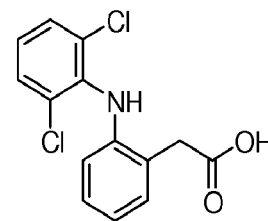
homoveratric acid



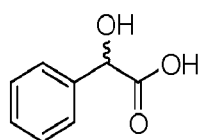
atropic acid



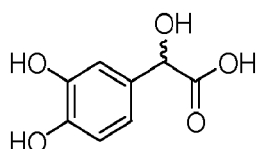
tropic acid



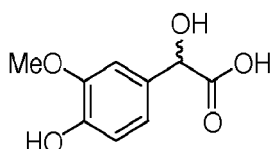
diclofenac



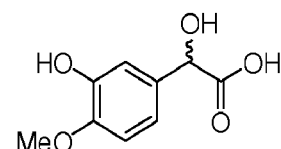
mandelic acid



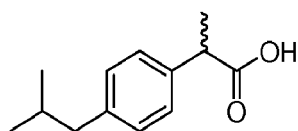
3,4-dihydroxymandelic acid



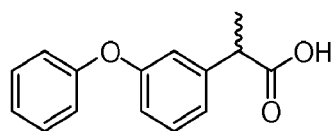
vanillylmandelic acid



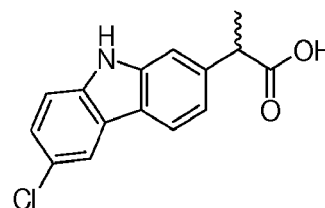
isovanillylmandelic acid



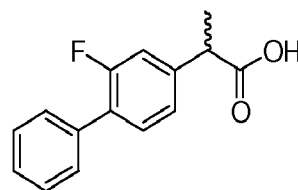
ibuprofen



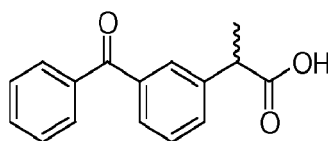
fenopfen



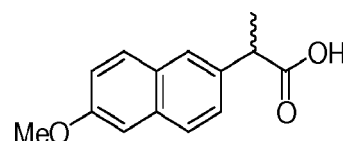
carprofen



flurbiprofen



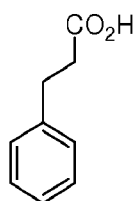
ketoprofen



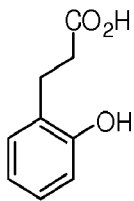
naproxen

4/24

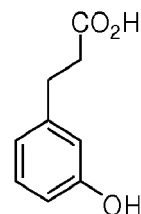
FIGURE 4
STRUCTURES OF SOME BENZYLACETATES



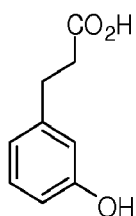
3-phenylpropanoic acid
(benzylacetic acid)



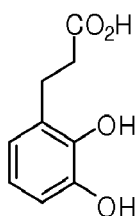
Melilotic acid



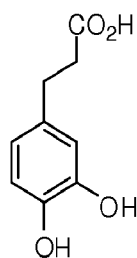
3-hydroxyphenyl-
propanoic acid



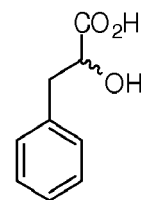
4-hydroxyphenyl-
propanoic acid



2,3-dihydroxyphenyl-
propanoic acid

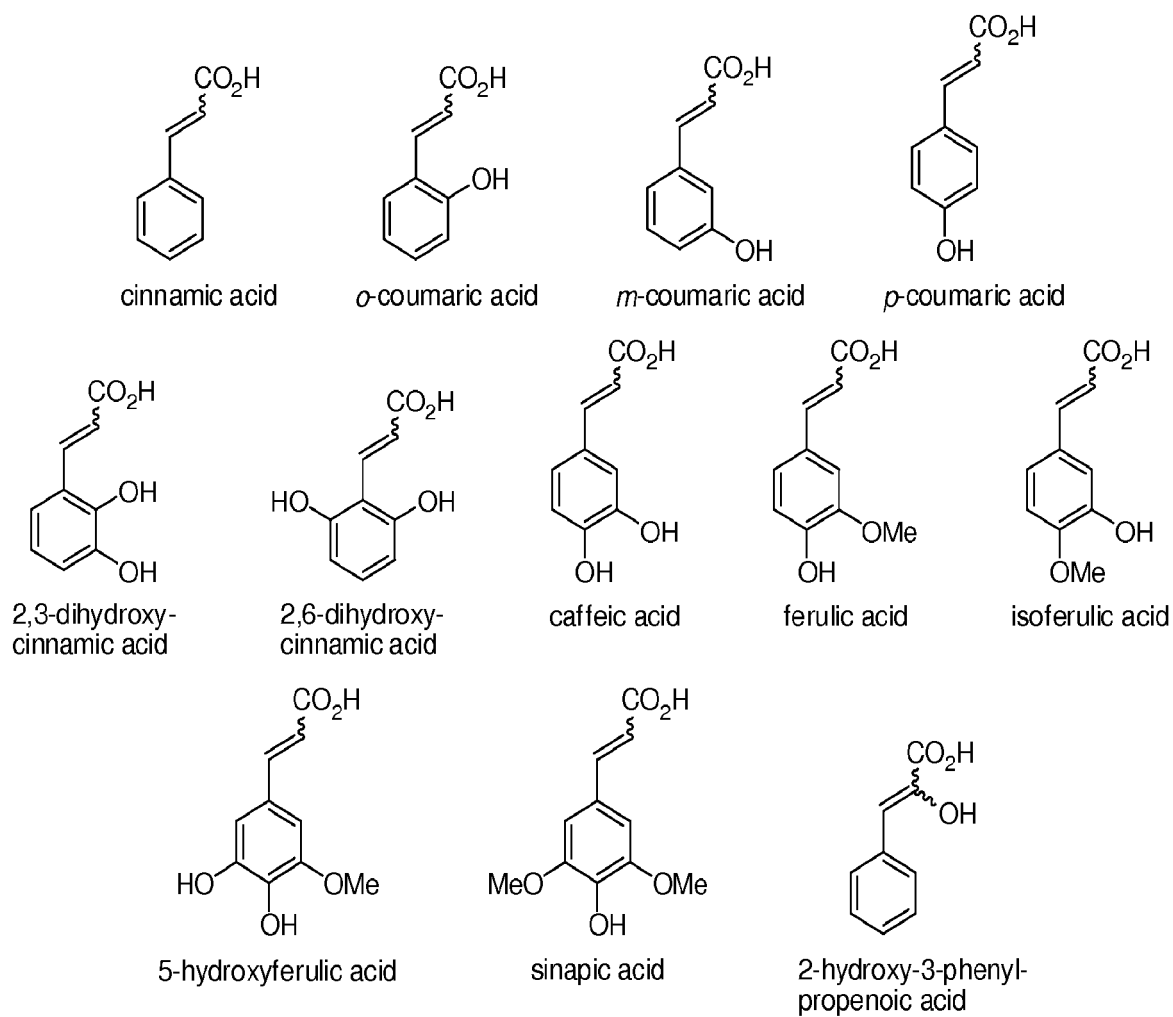


3,4-dihydroxyphenyl-
propanoic acid



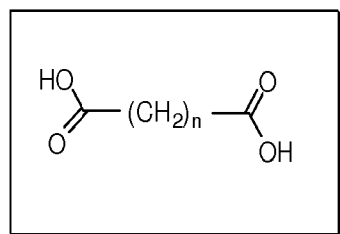
Phenyllactic acid

FIGURE 5
STRUCTURES OF SOME CINNAMATES



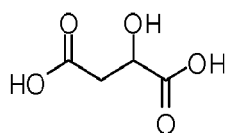
6/24

FIGURE 6
STRUCTURES OF SOME DICARBOXYLIC ACIDS

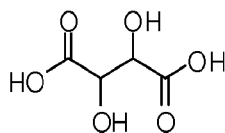


When

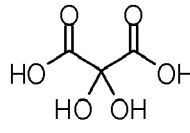
- n = 0 Oxalic acid
- n = 1 Malonic acid
- n = 2 Succinic acid
- n = 3 Glutaric acid
- n = 4 Adipic acid
- n = 5 Pimelic acid
- n = 6 Suberic acid
- n = 7 Azelaic acid
- n = 8 Sebacic acid



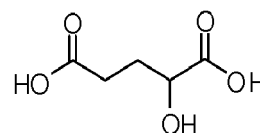
Malic acid



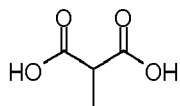
Tartaric acid



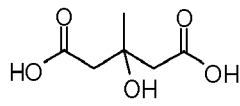
dihydroxymesoxalic acid



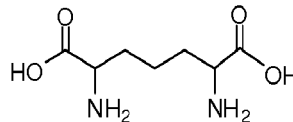
α-hydroxyglutaric acid



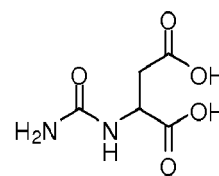
Methylmalonic acid



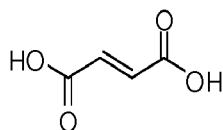
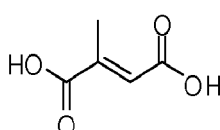
Meglutoic acid



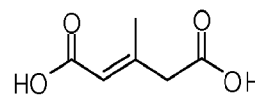
Diaminopimelic acid



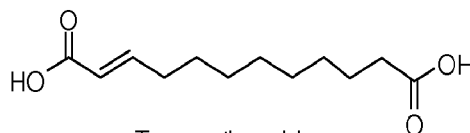
Carbamoyl aspartic acid

Fumaric acid (trans isomer)
Maleic acid (cis isomer)

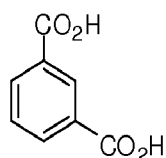
Mesaconic acid



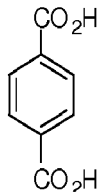
3-methylglutaconic acid



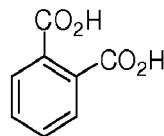
Traumatic acid



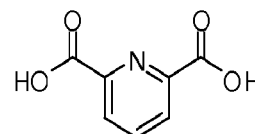
Isophthalic acid



Terephthalic acid



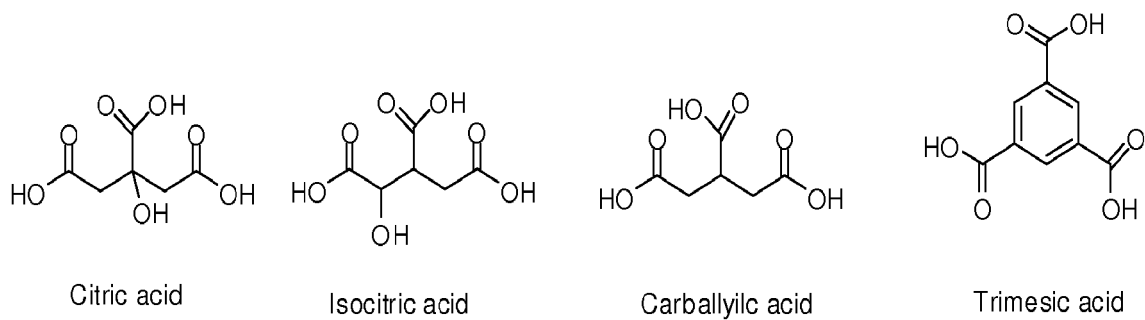
Phthalic acid



Dipicolinic acid

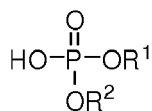
7/24

FIGURE 7
STRUCTURES OF SOME TRICARBOXYLIC ACIDS

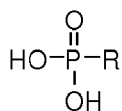


8/24

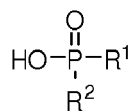
FIGURE 8
GENERAL STRUCTURES OF SOME INORGANIC OXOACIDS



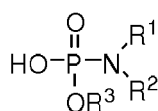
Phosphate



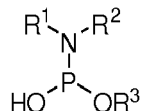
Phosphonate



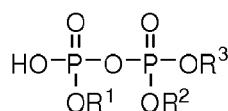
Phosphinate



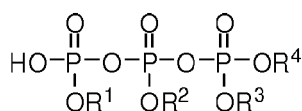
Phosphoramidate



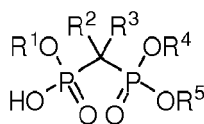
Phosphoramidite



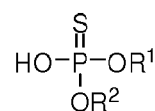
Diphosphate



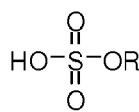
Triphosphate



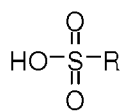
Biphosphonate



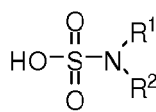
Phosphorothioate



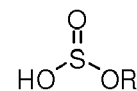
Sulfate



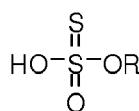
Sulfonate



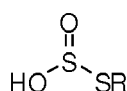
Sulfamate



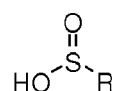
Sulfite



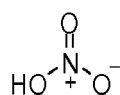
Thiosulfate



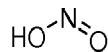
Thiosulfite



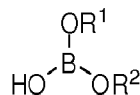
Sulfinate



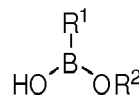
Nitrate



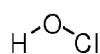
Nitrite



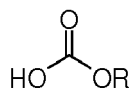
Borate



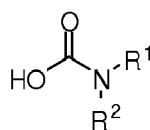
Boronate



Hypochlorite



Carbonate

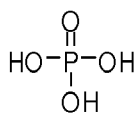


Carbamate

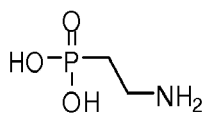
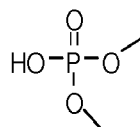
R, R¹, R², R³, R⁴, R⁵ = alkyl or aryl.

9/24

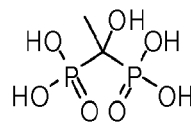
FIGURE 9
STRUCTURES OF SOME INORGANIC OXOACID DERIVATIVES



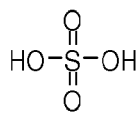
Phosphate

2-Aminoethyl-
phosphonate

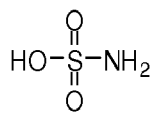
Dimethylphosphate



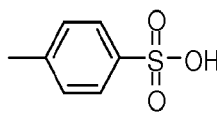
Etidronate



Sulfate



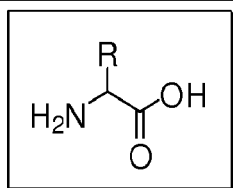
Sulfamate



Tosylate

10/24

FIGURE 10.
GENERAL STRUCTURES OF THE STANDARD AMINO ACIDS

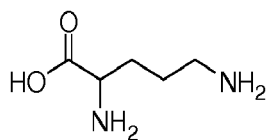


R =

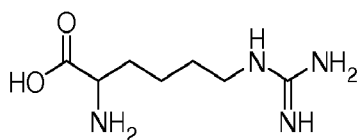
	Glycine		Histidine
	Alanine		Serine
	Phenylalanine		Cysteine
	Tyrosine		Threonine
	Aspartic acid		Methionine
	Glutamic acid		Valine
	Asparagine		Leucine
	Glutamine		Isoleucine
	Lysine		Tryptophan
	Arginine		Proline
	Selenocysteine		Pyrrolysine

11/24

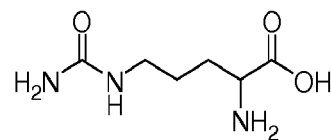
FIGURE 11.
STRUCTURES OF SOME NON-STANDARD AMINO ACIDS



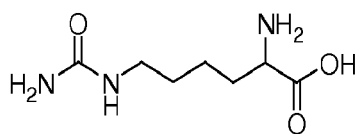
Ornithine



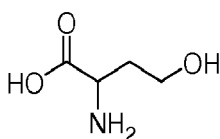
Homoarginine



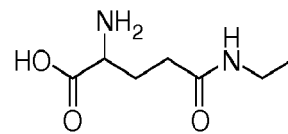
Citrulline



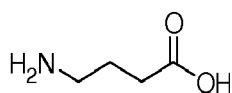
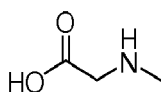
Homocitrulline



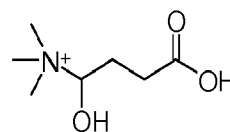
Homoserine



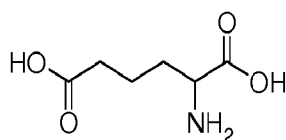
Theanine

 γ -Aminobutyric acid

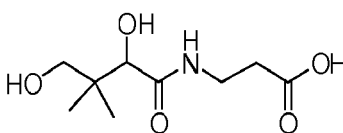
Sarcosine



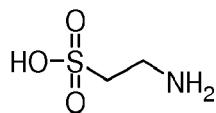
Carnitine



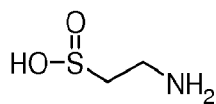
2-Aminoadipic acid



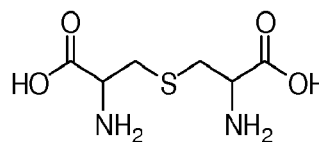
Pantothenic acid



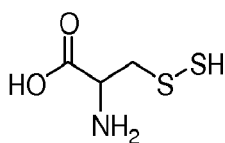
Taurine



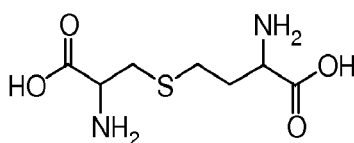
Hypotaurine



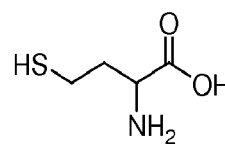
Lanthionine



Thiocysteine



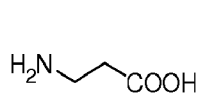
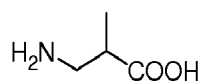
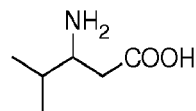
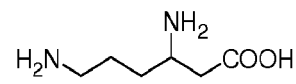
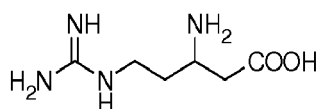
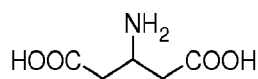
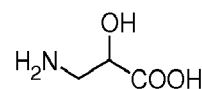
Cystathionine



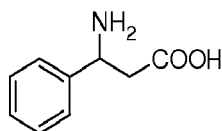
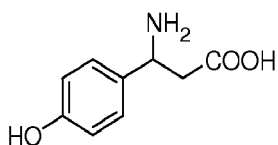
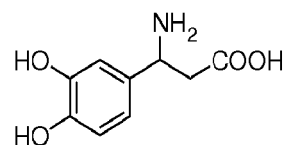
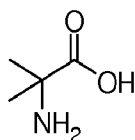
Homocysteine

12/24

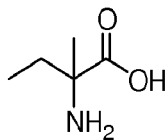
FIGURE 11. (CONT.)

 β -Alanine β -Aminoisobutyric acid β -Leucine β -Lysine β -Arginine β -Glutamate

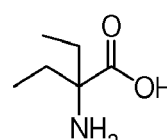
Isoserine

 β -Phenylalanine β -Tyrosine β -Dopa

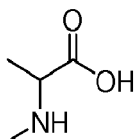
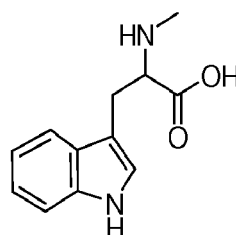
2-Aminoisobutyric acid



Isovaline



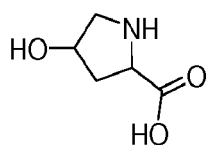
Di-n-ethylglycine

*N*-Methyl-alanine

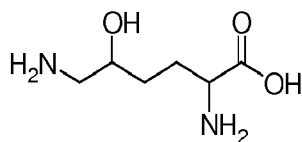
L-Abrine

13/24

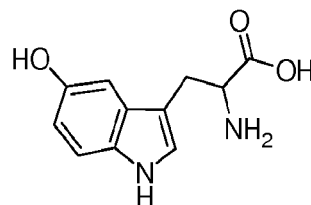
FIGURE 11. (CONT.)



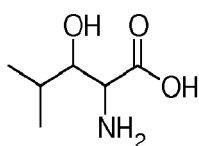
4-Hydroxyproline



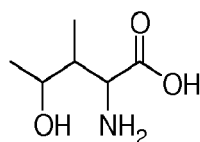
5-Hydroxylysine



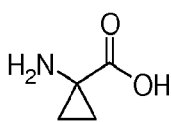
5-Hydroxy-tryptophan



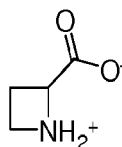
3-Hydroxyleucine



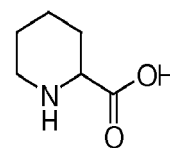
4-Hydroxyisoleucine



1-Aminocyclopropyl-1-carboxylic acid



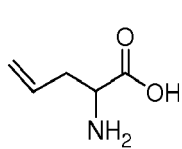
Azetidine-2-carboxylic acid



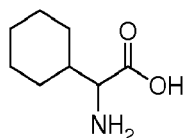
Pimelic acid

14/24

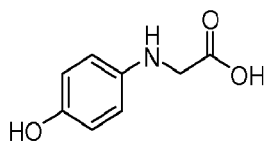
FIGURE 12.
STRUCTURES OF SOME SYNTHETIC AMINO ACIDS



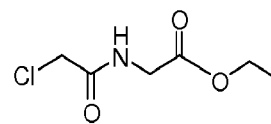
Allylglycine



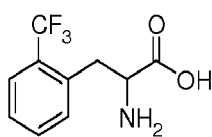
Cyclohexylglycine



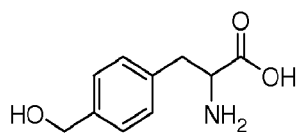
N-(4-Hydroxyphenyl)glycine



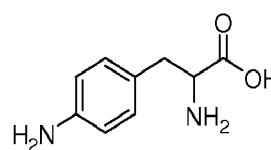
N-(Chloroacetyl)glycine ethyl ester



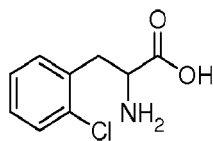
2-(Trifluoromethyl)-phenylalanine



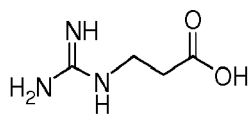
4-(Hydroxymethyl)-phenylalanine



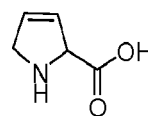
4-Amino-phenylalanine



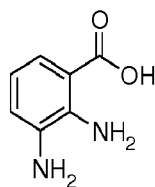
2-Chlorophenylglycine



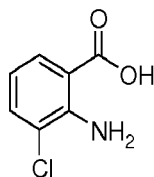
3-Guanidinopropionic acid



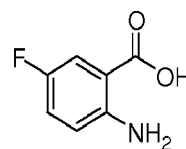
3,4-Dehydro-proline



2,3-Diaminobenzoic acid

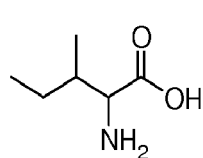


2-Amino-3-chlorobenzoic acid

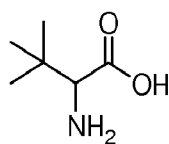


2-Amino-5-fluorobenzoic acid

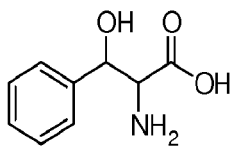
FIGURE 12. (CONT.)



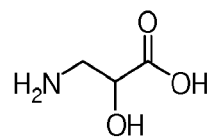
Allo-isoleucine



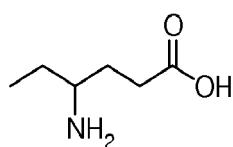
tert-Leucine



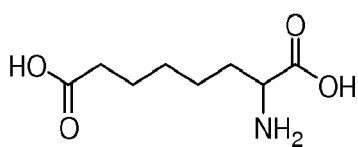
3-Phenylserine



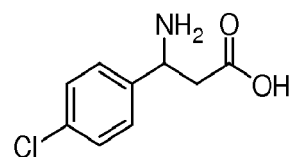
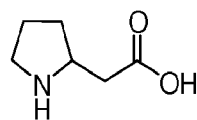
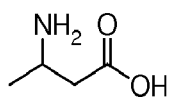
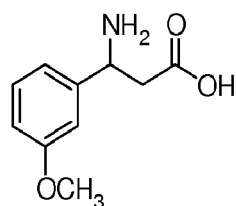
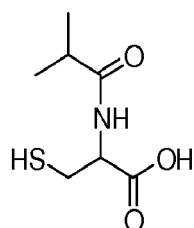
Isoserine



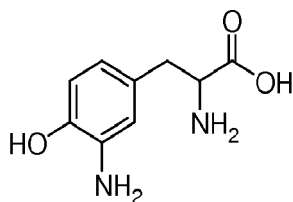
3-Aminopentanoic acid



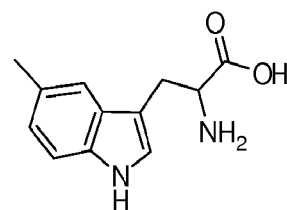
2-Amino-octanedioic acid

4-Chloro- β -phenylalanine β -Homoproline β -Homoalanine3-Amino-3-(3-methoxyphenyl)
propionic acid

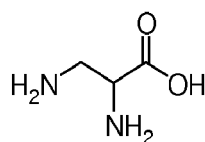
N-Isobutyryl-cysteine



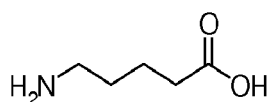
3-Amino-tyrosine



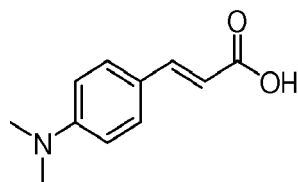
5-Methyl-tryptophan



2,3-Diaminopropionic Acid



5-Aminovaleric acid



4-(Dimethylamino)cinnamic acid

16/24

FIGURE 13

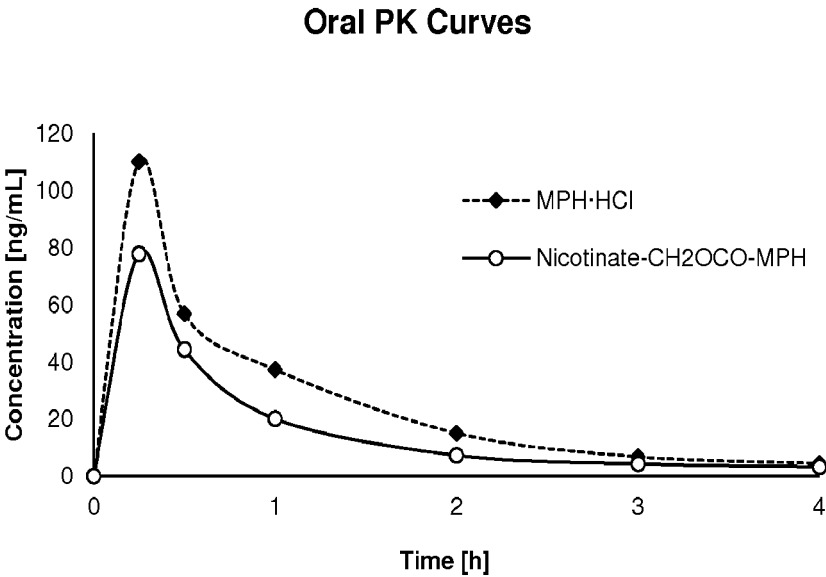
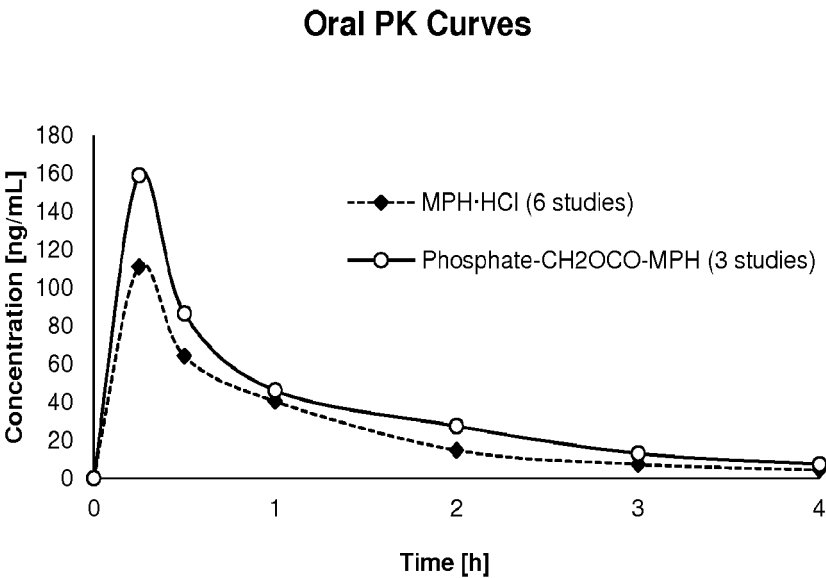


FIGURE 14



17/24

FIGURE 15

Oral PK Curves

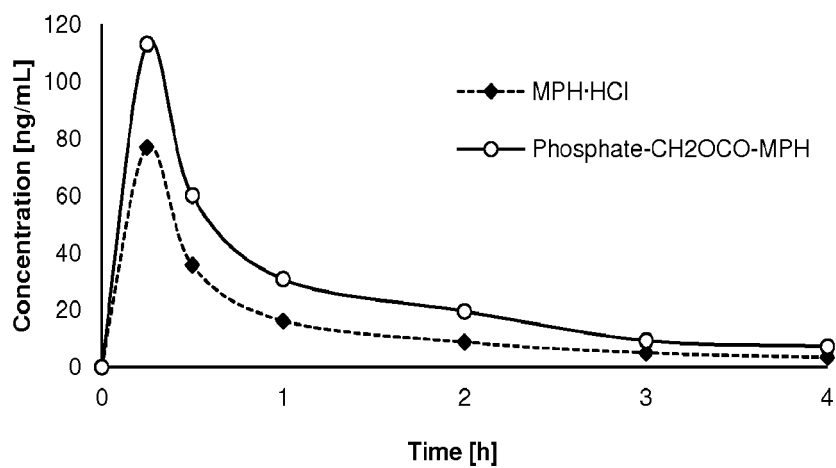
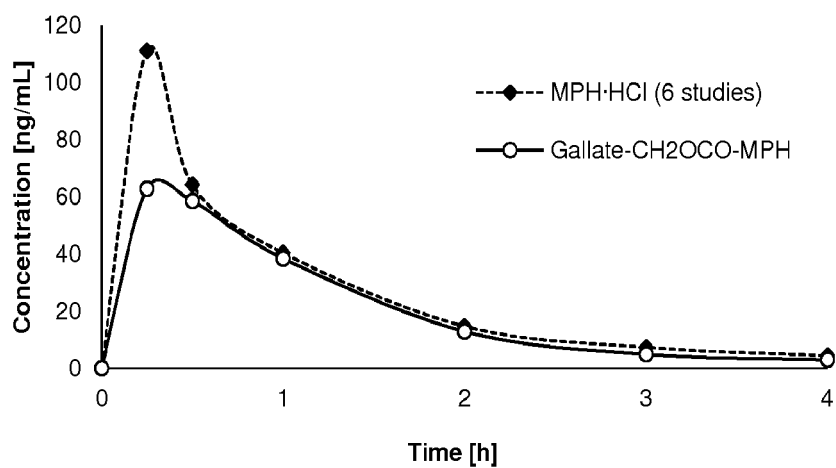


FIGURE 16

Oral PK Curves



18/24

FIGURE 17

Oral PK Curves

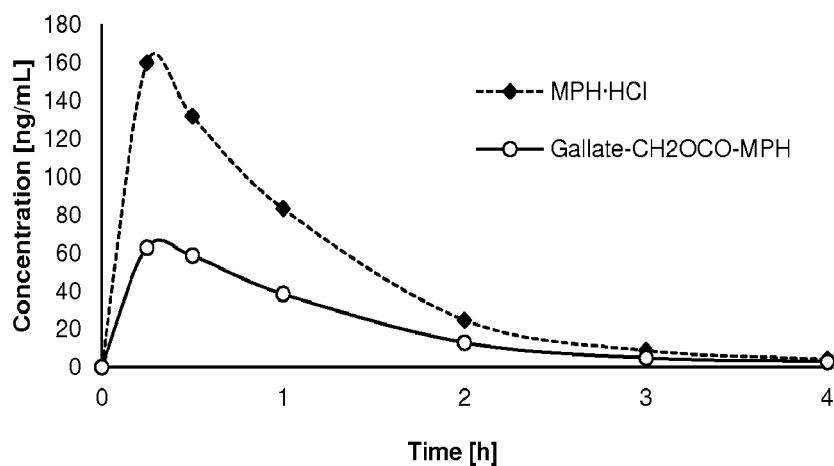
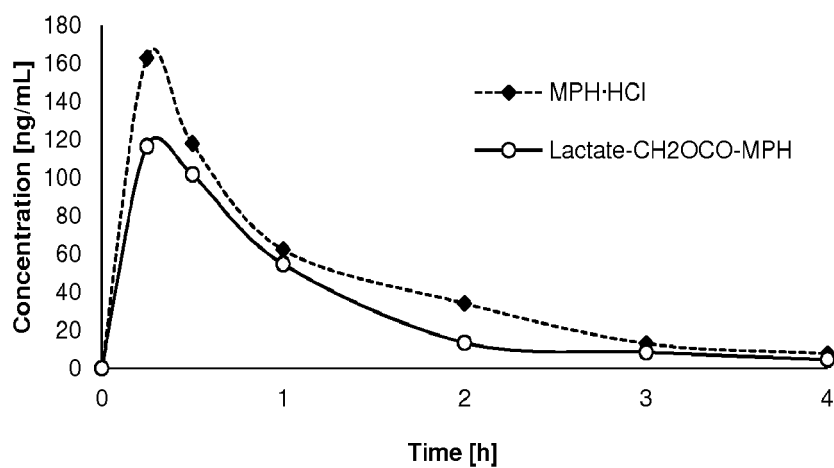


FIGURE 18

Oral PK Curves



19/24

FIGURE 19

Oral PK Curves

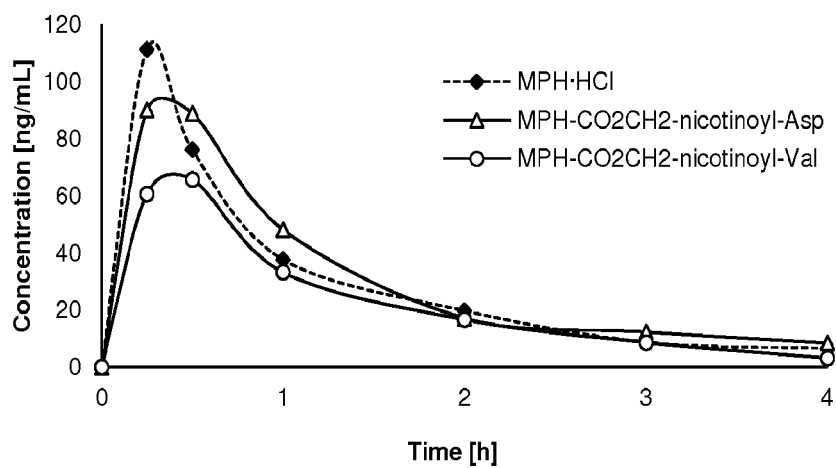
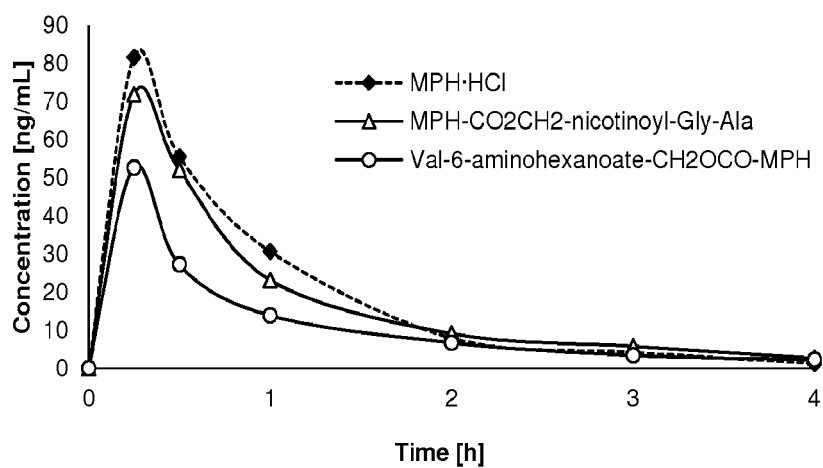


FIGURE 20

Oral PK Curves



20/24

FIGURE 21

Oral PK Curves

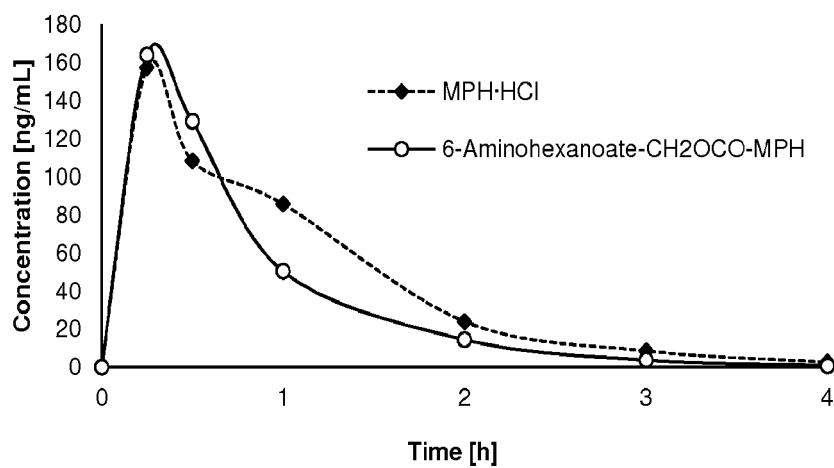
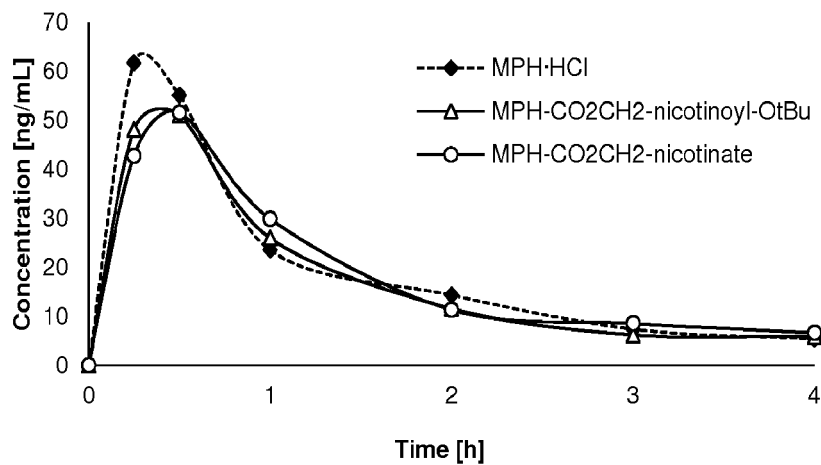


FIGURE 22

Oral PK Curves



21/24

FIGURE 23

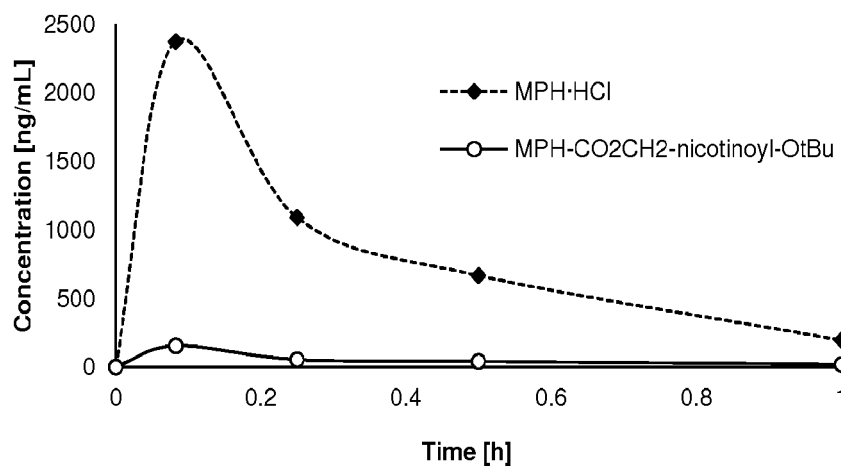
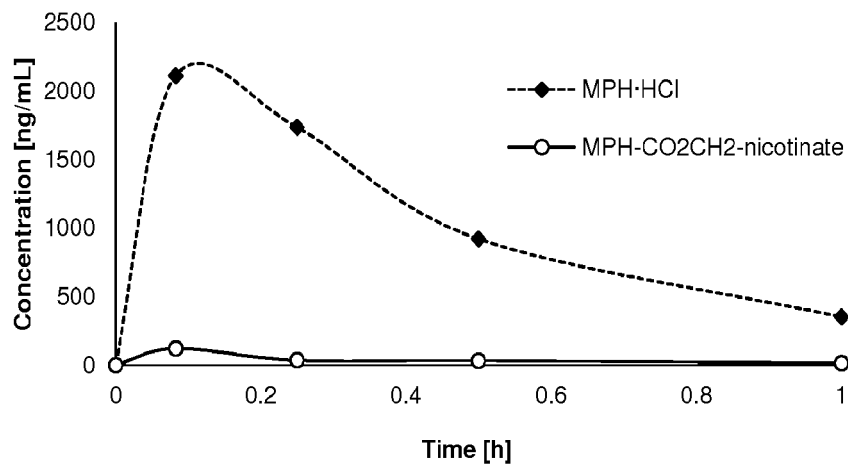
Intranasal PK Curves

FIGURE 24

Intranasal PK Curves

22/24

FIGURE 25

Oral PK Curves

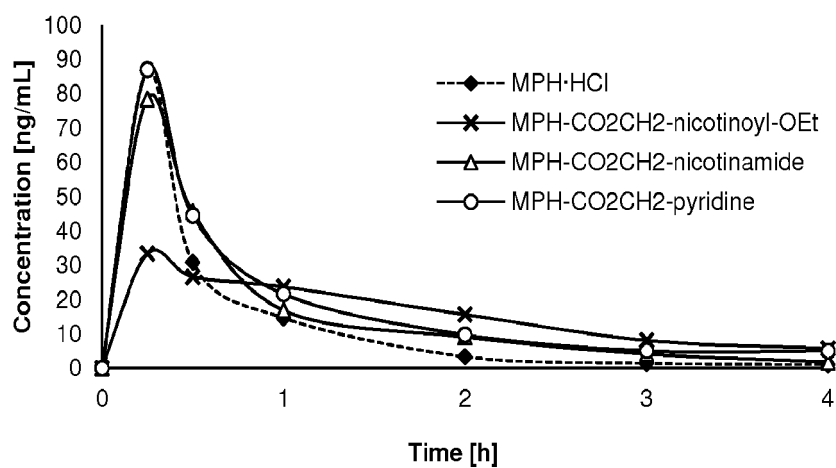
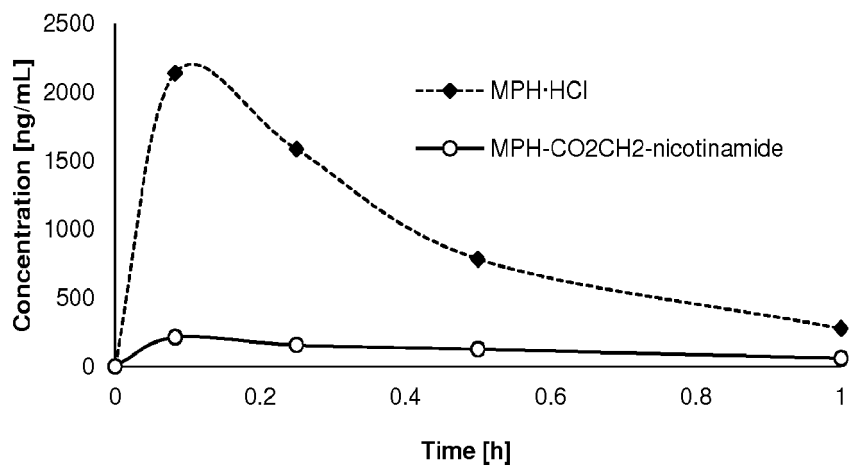


FIGURE 26

Intranasal PK Curves



23/24

FIGURE 27

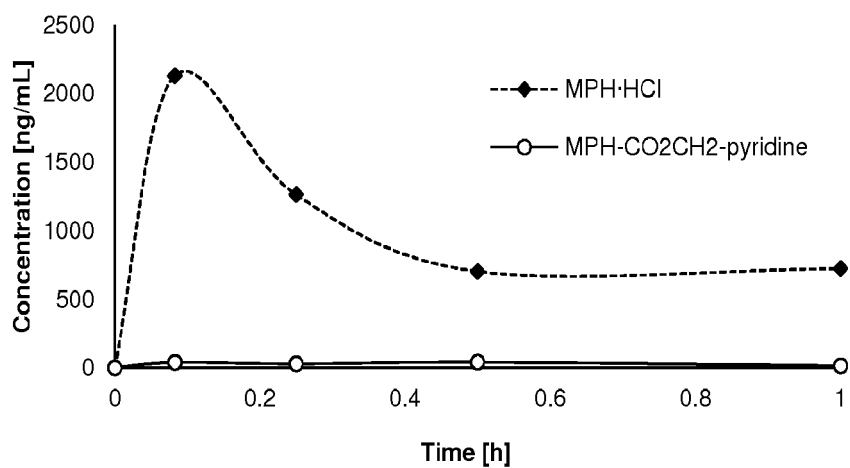
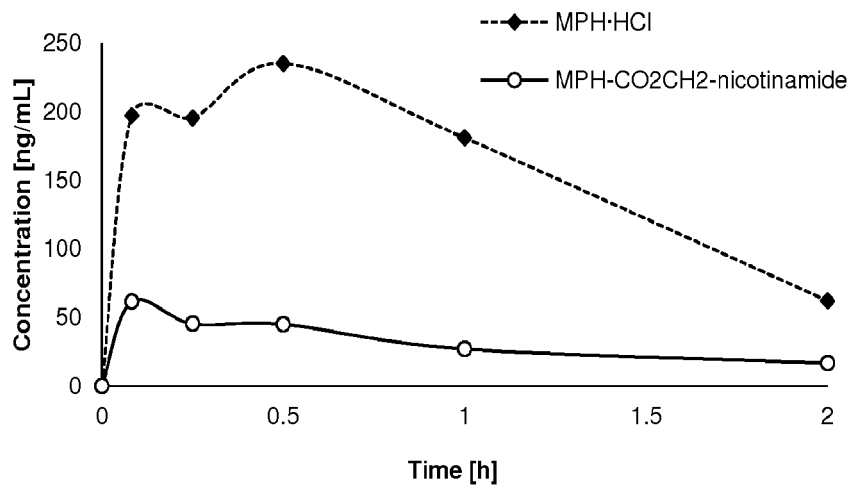
Intranasal PK Curves

FIGURE 28

Intravenous PK Curves

24/24

FIGURE 29

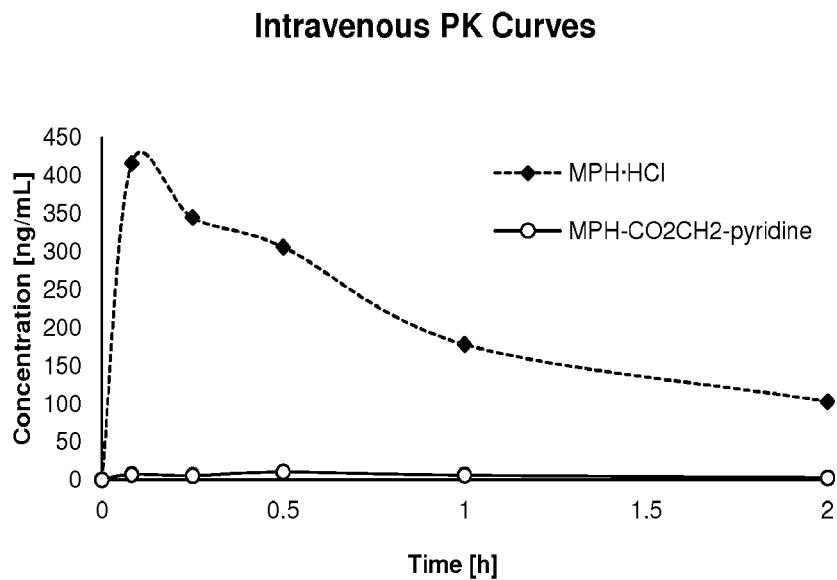


FIGURE 30

