

4. LC-MS/MS Opti Mix and IS

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ClinMass® Optimisation Mixes are intended for the optimisation of the MS/MS parameters and for the subsequent check-up of the analytical system. ClinMass® Internal Standards are used for the internal standardisation of the LC-MS/MS analysis.

ClinMass® Optimisation Mixes and ClinMass® Internal Standards are primarily intended to be used with LC-MS/MS Complete Kits of RECIPE (CE-IVD). In addition they may be used as kit-independent IVD reagents for the implementation or verification of inhouse methods.



Product Overview

► Amino Acids and Acylcarnitines

Analytes:

Optimisation Mix Amino Acids

¹³C₃¹⁵N-Alanine, ¹³C₆-Arginine, ¹³C₄-Aspartic Acid, ²H₇-Citrulline, ¹³C₅-Glutamic Acid, 2-¹³C¹⁵N-Glycine, ²H₃-Leucine, ²H₃-Methionine, ²H₆-Ornithine, ¹³C₆-Phenylalanine, ¹³C₅-Proline, ¹³C₆-Tyrosine, ²H₈-Valine

Optimisation Mix Acylcarnitines

²H₉-Carnitine (²H₉-C0),
²H₃-Acetylcarnitine (²H₃-C2),
²H₃-Propionylcarnitine (²H₃-C3),
²H₃-Butyrylcarnitine (²H₃-C4),
²H₉-Isovalerylcarnitine (²H₉-C5),
²H₉-Glutarylacetyl carnitine (²H₉-C5DC),
²H₃-Hexanoylcarnitine (²H₃-C6),
²H₃-Octanoylcarnitine (²H₃-C8),
²H₃-Decanoylcarnitine (²H₃-C10),
²H₃-Dodecanoylcarnitine (²H₃-C12),
²H₃-Tetradecanoylcarnitine (²H₃-C14),
²H₃-Hexadecanoylcarnitine (²H₃-C16),
²H₃-Octadecanoylcarnitine (²H₃-C18)

Order No.	Description	Quantity
MS10014	ClinMass® Optimisation Mix for Amino Acids and Acylcarnitines, lyophil. for kit order number MS10000 and MS10100	2 x 1 x 5 ml

► Antidepressants

Analytes:

Optimisation Mix 1:

Atomoxetine, Bupropion, Citalopram, Dosulepin, Fluoxetine, Mianserin, Milnacipran, Mirtazapine, Opipramol, Reboxetine, Sertraline, Trazodone, Venlafaxine

Optimisation Mix 2:

Clomethiazole, Desmethylfluoxetine, Desmethylmirtazapine, Desmethylsertraline, erythro-Dihydro-Bupropion, Duloxetine, Fluvoxamine, Hydroxybupropion, Moclobemide, O-Desmethylvenlafaxine, Paroxetine, Ritalinic Acid, Tranylcypromine

Order No.	Description	Quantity
MS9414	ClinMass® Optimisation Mix, for Antidepressants, lyophil. (Optimisation Mix 1 and 2)	2 x 1 x 2 ml

Product Overview

Order No.	Description	Quantity
MS9114	ClinMass® Optimisation Mix for Tricyclic Antidepressants, lyophil.	3 x 1 x 2 ml

► Antidepressants, tricyclic

Analytes:

Optimisation Mix 1:

Amitriptyline, Clozapine, Imipramine, Nordoxepin, Nortriptyline

Optimisation Mix 2:

Maprotiline, Norclomipramine, Norclozapine, Nortrimipramine, Protriptyline

Optimisation Mix 3:

Clomipramine, Desipramine, Doxepin, Normaprotiline, Trimipramine

Order No.	Description	Quantity
MS9214	ClinMass® Optimisation Mix for Antiepileptic Drugs, lyophil.	5 x 1 x 2 ml

► Antiepileptic Drugs

Analytes:

Optimisation Mix 1:

Carbamazepine, Felbamate, Oxcarbazepine, PEMA, Rufinamide, Vigabatrine

Optimisation Mix 2:

10-OH-Carbamazepine, Gabapentine, Perampnel, Phenytoin, Stiripentol

Optimisation Mix 3:

Carbamazepine-Diol, Lacosamide, Levetiracetam, Pregabalin, Theophylline

Optimisation Mix 4:

Carbamazepine-Epoxyde, Lamotrigine, Primidone, Retigabine, Tiagabine

Optimisation Mix 5:

Ethosuximide, NDMS, Phenobarbital, Sulthiame, Topiramate, Valproic Acid, Zonisamide

Order No.	Description	Quantity
MS9614	ClinMass® Optimisation Mix for Antimycotics, lyophil.	2 ml

► Antimycotics

Analytes:

Optimisation Mix:

5-Fluorocytosine, Amphotericin B, Anidulafungin, Fluconazole, Isavuconazole, Itraconazole, Ketoconazole, Micafungin, OH-Itraconazole, Posaconazole, Voriconazole

4.1 ClinMass® Optimisation Mixes

► Benzodiazepines

Analytes:

Optimisation Mix 1:

7-Aminoflunitrazepam, 7-Aminonitrazepam, Demoxepam, Flunitrazepam, Prazepam, Temazepam

Optimisation Mix 2:

Bromazepam, Clobazam, Lormetazepam, Nitrazepam, Norclobazam, Nordiazepam

Optimisation Mix 3:

7-Aminoclonazepam, alpha-Hydroxymidazolam, Alprazolam, Clonazepam, Desmethylflunitrazepam, Medazepam, Midazolam, Tetrazepam

Optimisation Mix 4:

alpha-Hydroxyalprazolam, Chlordiazepoxide, Desalkylflurazepam, Diazepam, Flurazepam, Trazodone, Zolpidem

Optimisation Mix 5:

alpha-Hydroxytriazolam, Estazolam, Lorazepam, Oxazepam, Triazolam, Zaleplon

Order No.	Description	Quantity
MS6015	ClinMass® Optimisation Mix 1, lyophil., for Benzodiazepines	2 ml

Order No.	Description	Quantity
MS6016	ClinMass® Optimisation Mix 2, lyophil., for Benzodiazepines	2 ml

Order No.	Description	Quantity
MS6017	ClinMass® Optimisation Mix 3, lyophil., for Benzodiazepines	2 ml

Order No.	Description	Quantity
MS6018	ClinMass® Optimisation Mix 4, lyophil., for Benzodiazepines	2 ml

Order No.	Description	Quantity
MS6019	ClinMass® Optimisation Mix 5, lyophil., for Benzodiazepines	2 ml

► Ethylglucuronide and Ethylsulfate

Analytes:

Optimisation Mix:

Ethylglucuronide, d5-Ethylglucuronide, Ethylsulfate, d5-Ethylsulfate

Order No.	Description	Quantity
MS8014	ClinMass® Optimisation Mix for Ethylglucuronide and Ethylsulfate	2 ml

► Immunosuppressants

Analytes:

Optimisation Mix1:

Cyclosporine A, Tacrolimus, Sirolimus, Everolimus

Optimisation Mix1:

d12-Cyclosporine A, 13Cd2-Tacrolimus, 13Cd3-Sirolimus, 13C2d4-Everolimus

Order No.	Description	Quantity
MS1014	ClinMass® Optimisation Mix 1, lyophil., for Immunosuppressants for kit order nos. MS1100, MS1200, MS1300	2 ml

Order No.	Description	Quantity
MS1115	ClinMass® Optimisation Mix 2, lyophil., for Immunosuppressants for kit order nos. MS1100, MS1200, MS1300	2 ml

► Metanephrines

Analytes:

Optimisation Mix:

3-Methoxytyramine, d4-3-Methoxytyramine, Metanephrine, d3-Metanephrine, Normetanephrine, d3-Normetanephrine

Order No.	Description	Quantity
MS11014	ClinMass® Optimisation Mix for Metanephrines	2 ml

4.1 ClinMass® Optimisation Mixes

Order No.	Description	Quantity
MS5114	ClinMass® Optimisation Mix for Methylmalonic	2 ml

► Methylmalonic Acid

Analytes:

Optimisation Mix:

Methylmalonic Acid, d3-Methylmalonic Acid

Order No.	Description	Quantity
MS99114	ClinMass® Optimisation Mix for Mycophenolic Acid, lyophil.	2 ml

► Mycophenolic Acid

Analytes:

Optimisation Mix:

Mycophenolic Acid

Order No.	Description	Quantity
MS9314	ClinMass® Optimisation Mix for Neuroleptics, lyophil.	2 x 1 x 2 ml

► Neuroleptics

Analytes:

Optimisation Mix 1:

Amisulpride, Aripiprazole, Clozapine, Fluphenazine, Haloperidol, Melperone, Olanzapine, Perazine, Promethazine, Quetiapine, Risperidone, Sertindole, Sulpiride, Ziprasidone

Optimisation Mix 2:

Chlorpromazine, Chlorprothixene, Dehydro-Aripiprazole, Desmethylolanzapine, Flupenthixol, Levomepromazine, Norclozapine, Norquetiapine, Paliperidone, Pipamperone, Prothipendyl, Thioridazine, Zotepine, Zuclopenthixol)

Order No.	Description	Quantity
MS12014	ClinMass® Optimisation Mix for Steroids	2 x 1 x 2 ml

► Steroids

Analytes:

Optimisation Mix 1:

Androstenedione, 11-Deoxycortisol, 17-Hydroxyprogesterone, DHEAS

Optimisation Mix 2:

Cortisol, 21-Deoxycortisol, 21-Hydroxyprogesterone, Testosterone

Order No.	Description	Quantity
MS7014	ClinMass® Optimisation Mix for 25-OH-Vitamin D2/D3 for kit order nos. MS7000, MS7100, MS7200	2 ml

► 25-OH Vitamin D2 / D3

Analytes:

Optimisation Mix for 25-OH-Vitamin D2/D3:

25-OH-Vitamin D3, 25-OH-Vitamin D2, d6-25-OH-Vitamin D3

Optimisation Mix for 25-OH-Vitamin D3 and 3-Epimer:

25-OH-Vitamin D3, 3-epi-25-OH-Vitamin D3

Order No.	Description	Quantity
MS7015	ClinMass® Optimisation Mix for 25-OH-Vitamin D3 and 3-Epimer for kit order nos. MS7000, MS7100, MS7200	1 ml

Product Overview

► Amino Acids and Acylcarnitines

Analytes:

Amino Acids

¹³C₃ ¹⁵N-Alanine, ¹³C₆-Arginine, ¹³C₄-Aspartic Acid,
²H₇-Citrulline, ¹³C₅-Glutamic Acid,
 2-¹³C¹⁵N-Glycine, ²H₃-Leucine, ²H₃-Methionine,
²H₆-Ornithine, ¹³C₆-Phenylalanine, ¹³C₅-Proline,
¹³C₆-Tyrosine, ²H₈-Valine

Acylcarnitines

²H₉-Carnitine (²H₉-C0), ²H₃-Acetylcarnitine
 (²H₃-C2), ²H₃-Propionylcarnitine (²H₃-C3),
²H₃-Butyrylcarnitine (²H₃-C4),
²H₉-Isovalerylcarnitine (²H₉-C5),
²H₉-Glutarylacetyl carnitine (²H₉-C5DC),
²H₃-Hexanoylcarnitine (²H₃-C6)
²H₃-Octanoylcarnitine (²H₃-C8),
²H₃-Decanoylcarnitine (²H₃-C10),
²H₃-Dodecanoylcarnitine (²H₃-C12),
²H₃-Tetradecanoylcarnitine (²H₃-C14),
²H₃-Hexadecanoylcarnitine (²H₃-C16),
²H₃-Octadecanoylcarnitine (²H₃-C18)

Order No.	Description	Quantity
MS10012	ClinMass® Internal Standard, lyophil., for Amino Acids and Acylcarnitines for kit order no. MS10000 and MS10100	25 ml
MS10012A	ClinMass® Internal Standard, lyophil., for Amino Acids and Acylcarnitines for kit order no. MS10000 and MS10100	100 ml

► Antidepressants

Analytes:

d₃-Agomelatine, d₃-Atomoxetine,
 d₉-Bupropion, d₆-Citalopram,
 d₃-Desmethylcitalopram,
 d₅-Desmethylfluoxetine,
 d₄-Desmethylsertraline,
 d₆-O-Desmethyltramadol,
 d₉-threo-Dihydro-Bupropion, d₃-Dosulepin,
 d₇-Duloxetine, d₅-Fluoxetine, d₃-Fluvoxamine,
 d₆-Hydroxybupropion, d₉-Methylphenidate,
 d₃-Mianserin, d₁₀-Milnacipran, d₃-Mirtazapine,
 d₈-Moclobemide, d₆-Nefazodone,
 d₄-Opipramol, d₄-Paroxetine, d₅-Reboxetine,
 d₃-Sertraline, d₆-Tramadol, d₅-Tranylcypromine,
 d₆-Venlafaxine, d₈-Vortioxetine

Order No.	Description	Quantity
MS9412	ClinMass® Internal Standard, lyophil., for Antidepressants for TDM Platform, Add-on Set-order no. MS9400	5 x 5 ml
MS9462	ClinMass® Internal Standard, lyophil., for Antidepressants for TDM Platform, on-line, Add-on Set order no. MS9450	5 ml

Product Overview

Order No.	Description	Quantity
MS9112	ClinMass® Internal Standard, lyophil., for Tricyclic Antidepressants for TDM Platform, Add-on Set order no. MS9100	5 x 5 ml
MS9162	ClinMass® Internal Standard, lyophil., for Tricyclic Antidepressants for TDM Platform, on-line, Add-on Set order no. MS9150	5 ml

► Antidepressants, tricyclic

Analytes:

Optimisation Mix 1:

d₃-Amitriptyline, d₃-Clomipramine, d₄-Clozapine, d₃-Desipramine, d₃-Doxepin, d₃-Imipramine, d₅-Maprotiline, d₃-Norclomipramine, d₈-Norclozapine, d₃-Nordoxepin, d₃-Nortriptyline, d₃-Trimipramine

Order No.	Description	Quantity
MS9212	ClinMass® Internal Standard, lyophil., for Antiepileptic Drugs for TDM Platform, Add-on Set-order no. MS9200	5 x 5 ml
MS9262	ClinMass® Internal Standard, lyophil., for Antiepileptic Drugs for TDM Platform, on-line, Add-on Set order no. MS9250	5 ml

► Antiepileptic Drugs

Analytes:

d₁₀-Carbamazepine, d₃-Ethosuximide, d₄-Felbamate, d₃-Lacosamide, ¹³C₃-Lamotrigine, d₆-Levetiracetam, d₄-Oxcarbazepine, d₅-Phenobarbital, d₅-Phenylethylmalonamide (PEMA), d₁₀-Phenytoin, d₄-Pregabalin, d₅-Primidone, d₄-Retigabine, d₉-Stiripentol, d₆-Theophylline, d₆-Tiagabine, d₁₂-Topiramate, d₆-Valproic Acid, ¹⁵N,₄-Zonisamide

Order No.	Description	Quantity
MS9612	ClinMass® Internal Standard, lyophil., for Antimycotics for TDM Platform, Add-on Set-order no. MS9600	5 x 5 ml
MS9662	ClinMass® Internal Standard, lyophil., for Antimycotics for TDM Platform, on-line, Add-on Set order no. MS9650	5 ml

► Antimycotics

Analytes:

¹³C¹⁵N₂-5-Fluorocytosine, d₄-Fluconazole, ¹³Cd₄-Isavuconazole, d₅-Itraconazole, d₈-Ketoconazole, d₅-OH-Itraconazole, d₄-Posaconazole, d₃-Voriconazole

Order No.	Description	Quantity
MS9512	ClinMass® Internal Standard, lyophil., for Benzodiazepines for TDM Platform, Add-on Set-order no. MS9500	5 x 5 ml
MS9562	ClinMass® Internal Standard, lyophil., for Benzodiazepines for TDM Platform, on-line, Add-on Set order no. MS9550	5 ml

► Benzodiazepines

Analytes:

d₄-7-Aminoclonazepam, d₇-7-Aminoflunitrazepam, d₅-a-Hydroxalprazolam, d₄-a-Hydroxymidazolam, d₄-a-Hydroxytriazolam, d₅-Alprazolam, d₅-Chlordiazepoxide, d₄-Clonazepam, d₅-Diazepam, d₅-Estazolam, d₇-Flunitrazepam, d₄-Lorazepam, d₄-Midazolam, d₅-Nitrazepam, d₅-Nordiazepam, d₅-Oxazepam, d₅-Prazepam, d₅-Temazepam, d₄-Triazolam, d₆-Zolpidem

4.2 ClinMass® Internal Standard

► Ethylglucuronide and Ethylsulfate

Analytes:

d₅-Ethylglucuronide, d₅-Ethylsulfate

Order No.	Description	Quantity
MS8012	ClinMass® Internal Standard for Ethylglucuronide and Ethylsulfate (in Diluting Solution D) for kit order no. MS8000	100 ml
MS8112	ClinMass® Internal Standard for Ethylglucuronide and Ethylsulfate (in Precipitant P) for kit order no. MS8100	30 ml

► Homocysteine

Analytes:

d₈-Homocysteine

Order No.	Description	Quantity
MS2012	ClinMass® Internal Standard, lyophil., for Homocysteine for kit order no. MS2000	5 ml
MS2112	ClinMass® Internal Standard, lyophil., for Homocysteine for kit order no. MS2100	5 ml

► Immunosuppressants

Analytes:

Ascomycin

Cyclosporine D

Ascomycin, Cyclosporine D, d4-Everolimus

d₁₂-Cyclosporin A, ¹³Cd₂-Tacrolimus, ¹³Cd₃-Sirolimus, ¹³C₂d₄-Everolimus

d₁₂-Cyclosporin A, ¹³Cd₂-Tacrolimus, ¹³Cd₃-Sirolimus, ¹³C₂d₄-Everolimus

Order No.	Description	Quantity
MS1012	ClinMass® Internal Standard, lyophil., for Immunosuppressants	2 µg

Order No.	Description	Quantity
MS1112	ClinMass® Internal Standard, lyophil., for Immunosuppressants	18 µg

Order No.	Description	Quantity
MS1212	ClinMass® Internal Standard, lyophil., for Immunosuppressants	3 ml

Order No.	Description	Quantity
MS1312	ClinMass® Internal Standard, lyophil., for Immunosuppressants	6.25 / 0.25 / 0.5 / 0.5 µg

Order No.	Description	Quantity
MS1412	ClinMass® Internal Standard, lyophil., for Immunosuppressants for kit order nos. MS1100, MS1200, MS1300	3 ml

► Metanephrines

Analytes:

d₃-Metanephrine, d₄-3-methoxytyramine, d₃-normetanephrine

Order No.	Description	Quantity
MS11012	ClinMass® Internal Standard for Metanephrines (in Precipitant P) for kit order no. MS11000	30 ml
MS11112	ClinMass® Internal Standard for Metanephrines for kit order no. MS11100	50 ml

4.2 ClinMass® Internal Standard

Order No.	Description	Quantity
MS5112	ClinMass® Internal Standard for Methylmalonic Acid (in Precipitant P) for kit order no. MS5100	40 ml

► Methylmalonic Acid

Analytes:

d₃-Methylmalonic Acid

Order No.	Description	Quantity
MS99112	ClinMass® Internal Standard, lyophil., for Mycophenolic Acid for TDM Platform, Add-on Set-order no. MS99100	5 x 5 ml

► Mycophenolic Acid

Analytes:

d₃-Mycophenolic Acid

Order No.	Description	Quantity
MS9312	ClinMass® Internal Standard, lyophil., for Neuroleptics for TDM Platform, Add-on Set-order no. MS9300	5 x 5 ml
MS9362	ClinMass® Internal Standard, lyophil., for Neuroleptics for TDM Platform, on-line, Add-on Set order no. MS9350	5 ml

► Neuroleptics

Analytes:

d₅-Amisulpride, d₈-Aripiprazole, d₆-Chlorpromazine, d₆-Chlorprothixene, d₄-Clozapine, d₈-Dehydro-Aripiprazole, d₄-Flupenthixol, d₈-Fluphenazine, d₄-Haloperidol, d₃-Levomepromazine, d₄-Melperone, d₈-Norclozapine, d₃-Olanzapine, d₄-Paliperidone, d₈-Perazine, d₁₀-Pipamperone, d₆-Promethazine, d₆-Prothipendyl, d₈-Quetiapine, d₄-Risperidone, d₄-Sertindole, d₃-Sulpiride, d₃-Thioridazine, d₈-Ziprasidone, d₄-Zuclopenthixol

Order No.	Description	Quantity
MS3012	ClinMass® Internal Standard for Nicotine and Metabolites	1.5 ml

► Nicotine and Metabolites

Analytes:

d₃-Nicotine, d₃-Cotinine, d₃-OH-Cotinine

Order No.	Description	Quantity
MS12012	ClinMass® Internal Standard for Steroids for kit order no. MS12000	10 ml

► Steroids

Analytes:

d₇-Androstenedione, d₄-Cortisol, d₅-11-Deoxycortisol, d₈-17-Hydroxyprogesterone, d₃-Testosterone, d₅-DHEAS

Order No.	Description	Quantity
MS7012	ClinMass® Internal Standard for 25-OH-Vitamin D2/D3 for kit order nos. MS7000, MS7100, MS7200	30 ml

► 25-OH Vitamin D2 / D3

Analytes:

d₆-25-OH-Vitamin D3