



# Global List of Validated Bioanalytical Assays

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For further information on our validated assays, please contact your  
business development representative or via [info@celerion.com](mailto:info@celerion.com).



# Assays Under Development

Compound Name	Technique	Species/Matrix
AAMA; GAMA	LC-MS/MS	Human Urine
Amylin	LC-MS/MS / EIA	Human Serum
anti-Rituximab	EIA	Human Serum
anti-Ustekinumab	EIA	Human Serum
anti-Ustekinumab	EIA	Human Plasma
As-Cd-Cr-Pb-Ni	ICP/MS	Human Urine
Cd	ICP/MS	Human Urine
Insulin analogues	LC-MS/MS	Human Plasma
Insulin glargine; M1: M2	EIA	Human Plasma
Insulin glargine; M1: M2	LC-MS/MS	Human Plasma
Nicotelline; Anatalline	LC-MS/MS	Human Urine
Normicotine; Norcotinine; Nicotine-N'-oxide; Cotinine-N-oxide; 4-Hydroxy-4-(3-pyridyl)-butanoic acid	LC-MS/MS	Human Urine
Rituximab	EIA	Human Serum
Salmeterol	LC-MS/MS	Human Plasma
Tolbutamide; 4OH-tolbutamide	LC-MS/MS	Human Plasma
Ustekinumab	EIA	Human Serum
Ustekinumab	EIA	Human Plasma

# Validated Assay List

Compound Name	Technique	Species/Matrix	Range	Anti-coag.
1-Hydroxypyrene (1-OHP)	LC-MS/MS	Human Urine	10-2000 pg/mL	N/A
1; 2-Dihydroxybutyl Mercapturic Acid (DHBMA)	LC-MS/MS	Human Urine	10-1000 ng/mL	N/A
2-Pralidoxime (2-PAM)	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
3-Hydroxybenzo[a]pyrene (3-OH $\beta$ aP)	LC-MS/MS	Human Urine	25-600 fg/mL	N/A
3-Hydroxypropylmercapturic Acid (3-HPMA)	LC-MS/MS	Human Urine	35-5000 ng/mL	N/A
3-Hydromorphone	LC-MS/MS	Human Plasma	0.05000 – 10.00 ng/mL	EDTA
5-Fluorocytosine	LC-MS/MS	Human Plasma	0.5-100 ug/mL	EDTA
5-Fluorouracil	LC-MS/MS	Human Plasma	25-5000 ng/mL	EDTA
6-Beta Naltrexol	LC-MS/MS	Human Plasma	0.5-25 pg/mL	EDTA
6-Mercaptopurine (6-MP)	LC-MS/MS	Human Plasma	0.25-25 ng/mL	Heparin
8-iso-Prostaglandin $F_{2\alpha}$ (Type III)	LC-MS/MS	Human Urine	25-1500 pg/mL	N/A
8-iso-Prostaglandin $F_{2\alpha}$ (Type IV)	LC-MS/MS	Human Urine	25-6000 pg/mL	N/A
11-Dehydro Thromboxane $B_2$	LC-MS/MS	Human Urine	5-500 pg/mL	N/A
11-Dehydro Thromboxane $B_2$	LMS/MS	Human Urine	25-2500 pg/ mL	N/A

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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
17-Deacetyl norgestimate; Levonorgestrel	LC-MS/MS	Human Plasma	20-2500 pg/mL; 80-3500 pg/mL	EDTA
Abacavir; Zidovudine	LC-MS/MS	Human Plasma	25-4000 ng/mL; 25-4000 ng/mL	Heparin
Abacavir; Zidovudine; Lamivudine	LC-MS/MS	Human Plasma	30-9000 ng/mL; 10-3000 ng/mL; 10-3000 ng/mL	EDTA
Acetamidophenol	LC-MS/MS	Human Plasma	0.5-25 ug/mL	EDTA, Heparin
Acetaminophen	LC-MS/MS	Human Plasma	50-10000 ng/mL	EDTA, Heparin
Acetyl Salicylic Acid (ASA)	LC-MS/MS	Human Plasma	0.1-20 ug/mL	EDTA
Acetyl Salicylic Acid (ASA); Salicylic Acid (SA)	LC-MS/MS	Human Plasma	2-500 ng/mL; 50-12500 ng/mL	NaF/EDTA
Alendronate	LC-MS/MS	Human Urine	1-200 ng/mL	N/A
Alendronate	LC-MS/MS	Human Serum	0.05-20 ng/mL	N/A
Alendronate	LC-MS/MS	Human Plasma	50-20000 pg/mL	EDTA
Allopurinol; Oxypurinol	LC-MS/MS	Human Plasma	0.1-20 ug/mL	EDTA
Alprazolam; Alpha-Hydroxyalprazolam	LC-MS/MS	Human Plasma	0.10-15 ng/mL; 0.05-7.5 ng/mL	EDTA
Amiodarone; Desethylamiodarone	LC-MS/MS	Human Plasma	10-10000 ng/mL; 0.5-200 ng/mL	EDTA
Amlodipine	LC-MS/MS	Human Serum	50-10000 pg/mL	N/A
Amlodipine	LC-MS/MS	Human Plasma	50-10000 pg/mL	EDTA
Amoxicillin	LC-MS/MS	Human Plasma	0.1-30 ug/mL	EDTA
Amphetamine D/L	LC-MS/MS	Human Plasma	0.5-50 ng/mL	EDTA
Anastrozole	LC-MS/MS	Human Plasma	0.1-60 ng/mL	EDTA, Heparin
Aprepitant	LC-MS/MS	Human Plasma	20-6000 ng/mL	EDTA
Aromatic Amines (1-AMN; 2-AMN; 3-ABP; 4-ABP)	LC-MS/MS	Human Urine	2-500 pg/mL; 2-500 pg/mL; 0.5-50 pg/mL; 1-100 pg/mL	N/A
Atenolol	LC-MS/MS	Human Plasma	5-1500 ng/mL	EDTA
Atomoxetine	LC-MS/MS	Human Plasma	5.2-1560 ng/mL	Heparin
Atorvastatin; Parahydroxy Atorvastatin; Orthohydroxy Atorvastatin	LC-MS/MS	Human Plasma	0.2-80 ng/mL; 0.1-40 ng/mL; 0.02-8 ng/mL	EDTA
Atropine	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
Baclofen	LC-MS/MS	Human Plasma	2-500 ng/mL	EDTA
Baclofen	LC-MS/MS	Mouse Plasma	20-5000 ng/mL	Heparin
Bicalutamide	LC-MS/MS	Human Plasma	10-5000 ng/mL	EDTA
Budesonide	LC-MS/MS	Human Plasma	5-1500 pg/mL	N/A
Buprenorphine	LC-MS/MS	Human Plasma	5-1000 pg/mL	Heparin
Buprenorphine	LC-MS/MS	Human Plasma	25-5000 pg/mL	Heparin
Buprenorphine; Norbuprenorphine	LC-MS/MS	Human Plasma	10-2500 pg/mL; 10-2500 pg/mL	Heparin
Bupropion	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
Bupropion; Hydroxybupropion	LC-MS/MS	Human Plasma	1-400 ng/mL; 4-1600 ng/mL	EDTA
C-Peptide	RIA	Human Serum	0.05-4 ng/mL	N/A
C-Peptide	EIA	Human Serum	0.15 ng/mL – 5.00 ng/mL	N/A
C-Peptide	RIA	Human Serum	100-4000 pg/mL	N/A
Caffeine	LC-MS/MS	Human Plasma	20-5000 ng/mL	Heparin
Caffeine; Paraxanthine	LC-MS/MS	Human Plasma	20-5000 ng/mL; 20-5000 ng/mL	Heparin

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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Candesartan	LC-MS/MS	Human Plasma	0.5-200 ng/mL	EDTA
Candesartan	LC-MS/MS	Human Plasma	2-200 ng/mL	EDTA
Capsaicin	LC-MS/MS	Human Plasma	5-500 pg/mL	Heparin
Carboplatin	ICP/MS	Human Serum	50-10000 ng/mL	N/A
Celecoxib	LC-MS/MS	Human Plasma	10-2500 ng/mL	EDTA
CEMA; 3-HPMA; HBMA	LC-MS/MS	Human Urine	20-5000 ng/mL; 20-5000 ng/mL; 0.2-150 ng/mL	N/A
CEMA; 2-HPMA, 3-HPMA; HBMA	LC-MS/MS	Human Urine	20-5000 ng/mL; 2.50 - 2000 ng/mL, 20-5000 ng/mL; 0.2-150 ng/mL	N/A
Cetirizine	LC-MS/MS	Human Plasma	10-750 ng/mL	EDTA
Cetirizine	LC-MS/MS	Human Plasma	2-400 ng/mL	EDTA
Chlorpheniramine	LC-MS/MS	Human Plasma	0.1-30 ng/mL	Heparin
Cholecalciferol	LC-MS/MS	Human Plasma	0.1-15 ng/mL	EDTA
Cisplatin	ICP/MS	Human Serum	50-10000 ng/mL	N/A
CK18	ELISA	Human Serum	75-1000 U/L	N/A
Clarithromycin; 14-Hydroxy-Clarithromycin	LC-MS/MS	Human Plasma	1-4000 ng/mL; 0.5-2000 ng/mL	EDTA
Clavulanic Acid	LC-MS/MS	Human Plasma	50-5000 ng/mL	EDTA
Clodronate	LC-MS/MS	Human Plasma	3-600 ng/mL	Heparin
Clonazepam	LC-MS/MS	Human Plasma	0.1-20 ng/mL	EDTA
Clopidogrel; Clopidogrel Acid	LC-MS/MS	Human Plasma	0.01-5 ng/mL; 10-5000 ng/mL	EDTA
Codeine	LC-MS/MS	Human Plasma	2-200 ng/mL; 0.1-30 ng/mL	Heparin
Colchicine	LC-MS/MS	Human Plasma	0.03-10 ng/mL	EDTA
Cortisol; 6-β-Hydroxycortisol	LC-MS/MS	Human Urine	2-500 ng/mL; 30-7500 ng/mL	N/A
Cotinine	LC-MS/MS	Human Saliva	1-100 ng/mL	N/A
Creatinine	ELISA	Human Urine	30-600 ug/mL	N/A
Cyclo (His-Pro)	LC-MS/MS	Human Plasma	2.5-1000 ng/mL	EDTA
Cyclosporine A	LC-MS/MS	Human Whole Blood	5-1000 ng/mL	K <sub>2</sub> EDTA
Cyproterone Acetate; 15-Beta-Hydroxycyproterone Acetate	LC-MS/MS	Human Plasma	0.1-40 ng/mL	Heparin
Dabigatran Free	LC-MS/MS	Human Plasma	0.5-250 ng/mL	EDTA
Dabigatran Total	LC-MS/MS	Human Plasma	1-500 ng/mL	EDTA
Danazol	LC-MS/MS	Human Plasma	0.5-200 ng/mL	K <sub>3</sub> EDTA
Danazol	LC-MS/MS	Human Serum	0.5-250 ng/mL	N/A
Darifenacin	LC-MS/MS	Human Plasma	0.05-10 ng/mL	EDTA
Deferiprone	LC-MS/MS	Human Serum	0.1-20 ug/mL	N/A
Desipramine	LC-MS/MS	Human Plasma	0.5-200 ng/mL	Heparin
Desipramine; 2-Hydroxydesipramine	LC-MS/MS	Human Plasma	0.5-200 ng/mL; 0.25-100 ng/mL	Heparin
Desmopressin	LC-MS/MS	Human Plasma	0.5/2-250 pg/mL	EDTA
Desmopressin	LC-MS/MS	Human Plasma	2-250 pg/mL	K <sub>3</sub> EDTA
Dexamethasone	LC-MS/MS	Human Plasma	0.1-50 ng/mL	EDTA
Dexlansoprazole	LC-MS/MS	Human Plasma	20-4000 ng/mL	EDTA
Dextromethorphan; Dextrorphan	LC-MS/MS	Rat Plasma	2-1000 ng/mL; 25-5000 ng/mL	EDTA, Heparin

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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Dextromethorphan; Dextrorphan	LC-MS/MS	Dog Plasma	2-1000 ng/mL; 25-5000 ng/mL	EDTA
Dextromethorphan; Dextrorphan	LC-MS/MS	Human Plasma	0.2-200 ng/mL; 2.5-2500 ng/mL	Heparin
Dextromethorphan; Dextrorphan	LC-MS/MS	Mouse Plasma	2-1000 ng/mL; 25-5000 ng/mL	EDTA
Dextromethorphan; Dextrorphan (total)	LC-MS/MS	Human Urine	0.12-30 ng/mL; 0.6-300 ng/mL	N/A
Diazepam; Nordiazepam	LC-MS/MS	Human Plasma	2-500 ng/mL	EDTA
Diclofenac	LC-MS/MS	Human Plasma	25-5000 pg/mL	K <sub>2</sub> EDTA
Diclofenac	LC-MS/MS	Human Plasma	0.5-50 ng/mL	Heparin
Diclofenac	LC-MS/MS	Human Plasma	2.5-500 ng/mL	K <sub>2</sub> EDTA
Digoxin	LC-MS/MS	Human Plasma	10-3500 pg/mL	K <sub>2</sub> EDTA
Dihydrotestosterone (DHT); Testosterone	LC-MS/MS	Human Serum	10-2000 pg/mL; 50-10000 pg/mL	N/A
Diltiazem; Deacetyldiltiazem; N-Desmethyldiltiazem	LC-MS/MS	Human Plasma	2-100 ng/mL; 0.5-25 ng/mL	Heparin
Diphenhydramine	LC-MS/MS	Human Plasma	0.5-150 ng/mL	EDTA
Dipyridamole	LC-MS/MS	Human Plasma	10-3000 ng/mL	EDTA
Dolasetron; Hydrodolasetron	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
Donepezil	LC-MS/MS	Human Plasma	0.3-45 ng/mL	Heparin
Donepezil	LC-MS/MS	Human Plasma	0.3-45 ng/mL	K <sub>2</sub> EDTA
Doxylamine	LC-MS/MS	Human Plasma	0.2-100 ng/mL	K <sub>2</sub> EDTA
Dronedaron	LC-MS/MS	Human Plasma	1-250 ng/mL	EDTA
Drospirenone	LC-MS/MS	Human Plasma	0.5-50 ng/mL	EDTA
Duloxetine	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
Efavirenz	LC-MS/MS	Human Plasma	10-5000 ng/mL	EDTA
Emtricitabine	LC-MS/MS	Human Plasma	10-2500 ng/mL	Heparin
Enalapril; Enalaprilat	LC-MS/MS	Human Plasma	0.5-100 ng/mL; 0.25-50 ng/mL	EDTA
Eprosartan	LC-MS/MS	Human Plasma	20-4000 ng/mL	EDTA
Eptifibatide	LC-MS/MS	Human Plasma	20-4000 ng/mL	EDTA
Escitalopram	LC-MS/MS	Human Plasma	0.2-40 ng/mL	K <sub>2</sub> EDTA
Estradiol	LC-MS/MS	Human Serum	2.5-500 pg/mL	N/A
Ethinyl Estradiol	LC-MS/MS	Human Plasma	2-500 pg/mL	EDTA
Exemestane	LC-MS/MS	Human Plasma	0.1-50 ng/mL	K <sub>3</sub> EDTA
Exenatide	EIA	Human Plasma	20-400 pg/mL	Heparin
Ezetimibe-Free	LC-MS/MS	Human Plasma	0.05-10 ng/mL	EDTA
Ezetimibe-Total	LC-MS/MS	Human Plasma	0.5-100 ng/mL	EDTA
Famotidine	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
Febuxostat	LC-MS/MS	Human Plasma	15-3000 ng/mL	Sodium Heparin
Felodipine	LC-MS/MS	Human Plasma	10-2000 pg/mL	EDTA
Fenofibrate; Fenofibric Acid; Reduced Fenofibric Acid	LC-MS/MS	Human Plasma	0.05-10 ng/mL; 10-2000 ng/mL; 0.5-100 ng/mL	EDTA
Fentanyl	LC-MS/MS	Human Serum	10-5000 pg/mL	N/A
Fentanyl	LC-MS/MS	Rabbit Serum	100-5000 pg/mL	N/A
Fentanyl	LC-MS/MS	Rat Plasma	20-7500 pg/mL	EDTA
Fexofenadine	LC-MS/MS	Human Plasma	2-400 ng/mL	Heparin
FGF-21	EIA	Human Serum	60-3000 pg/mL	N/A
Fimasartan	LC-MS/MS	Human Plasma	2-500 ng/mL	K <sub>2</sub> EDTA

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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Fluoxetine; Duloxetine; Paroxetine; Sertraline	LC-MS/MS	Human Plasma	1-500 ng/mL; 0.1-50 ng/mL; 0.2-100 ng/mL; 0.5-250 ng/mL	K <sub>2</sub> EDTA
Fluticasone	LC-MS/MS	Human Plasma	1-150 pg/mL	K <sub>2</sub> EDTA
Fluvastatin	LC-MS/MS	Human Plasma	1-400 ng/mL	K <sub>2</sub> EDTA
Fluvoxamine	LC-MS/MS	Human Plasma	0.200-100 ng/mL	EDTA
Furosemide	LC-MS/MS	Human Plasma	0.1-20 ug/mL	EDTA
Furosemide	LC-MS/MS	Human Urine	0.1-20 ug/mL	N/A
Gabapentin	LC-MS/MS	Human Plasma	40-10000 ng/mL	K <sub>2</sub> EDTA
Galanthamine	LC-MS/MS	Human Plasma	0.3-120 ng/mL	EDTA
Gemcitabine; dFdU	LC-MS/MS	Human Plasma	100-20000 ng/mL; 247-49300 ng/mL	Heparin
Gestodene	LC-MS/MS	Human Plasma	50-10000 pg/mL	EDTA
Ghrelin & Desacyl-Ghrelin	LC-MS/MS	Human Plasma	50-2500 pg/mL	EDTA
Glimepiride	LC-MS/MS	Human Plasma	2-400 ng/mL	EDTA
Glimepiride; Trans hydroxy Glimepiride	LC-MS/MS	Human Plasma	1-200 ng/mL; 0.2-40 ng/mL	EDTA
Glucagon	LC-MS/MS	Human Plasma	100-10000 pg/mL	EDTA
Glucagon	LC-MS/MS	Rat Plasma	1-150 ng/mL	EDTA
Glucagon	LC-MS/MS	Human Plasma	20-2000 pg/mL	EDTA
Glucose	Enzyme Assay	Human Plasma	60-1800 ug/mL	K <sub>3</sub> EDTA
Glyburide	LC-MS/MS	Human Plasma	2-400 ng/mL	EDTA
Glyburide; cis-3-Hydroxy Glyburide; <i>trans</i> -4-Hydroxy Glyburide	LC-MS/MS	Human Plasma	0.5-200 ng/mL; 0.1-50 ng/mL	Heparin
Glyburide; cis-3-Hydroxy Glyburide; <i>trans</i> -4-Hydroxy Glyburide	LC-MS/MS	Human Urine	5-2500 ng/mL; 20-10000 ng/mL	N/A
HEMA	LC-MS/MS	Human Urine	0.1-20 ng/mL	N/A
Hydrochlorothiazide	LC-MS/MS	Human Plasma	0.5-150 ng/mL	EDTA
Hydrocodone	LC-MS/MS	Human Plasma	0.1-40 ng/mL	Heparin
Ibandronate	LC-MS/MS	Human Serum	0.2-100 ng/mL	N/A
Ibuprofen	LC-MS/MS	Human Plasma	0.25-50 ug/mL	EDTA
Ibuprofen	LC-MS/MS	Human Plasma	0.5-50 ug/mL	Lithium Heparin
IGF-1	ELISA	Human Serum	0.09-6 ng/mL	N/A
Indapamide	LC-MS/MS	Human Whole Blood	1-200 ng/mL	EDTA
Indomethacin	LC-MS/MS	Human Plasma	5-2500 ng/mL	K <sub>2</sub> EDTA
Insulin	EIA	Human Serum	10 pM-400 pM	N/A
Insulin	EIA	Human Serum	20-600 pM	N/A
Irbesartan	LC-MS/MS	Human Plasma	30-6000 ng/mL	EDTA
Isradipine	LC-MS/MS	Human Plasma	50-10000 pg/mL	EDTA
Itraconazole; 7-OH-Itraconazole	LC-MS/MS	Human Plasma	1-500 ng/mL; 2-1000 ng/mL	K <sub>2</sub> EDTA
Ketoconazole	LC-MS/MS	Human Plasma	20-4000 ng/mL	EDTA
Ketoprofen	LC-MS/MS	Human Plasma	0.25-50 ng/mL	EDTA, Heparin
Lansoprazole	LC-MS/MS	Human Plasma	2-1200 ng/mL	Heparin
Lenalidomide	LC-MS/MS	Human Plasma	5-1000 ng/mL	K <sub>2</sub> EDTA
Leptin	EIA	Human Plasma	10-3200 pg/mL	EDTA
Letrozole	LC-MS/MS	Human Plasma	0.5-100 ng/mL	EDTA

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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Levonorgestrel	LC-MS/MS	Human Plasma	50-10000 pg/mL	EDTA
Lisinopril	LC-MS/MS	Human Plasma	0.5-100 ng/mL	K <sub>2</sub> EDTA
Losartan; Losartan Acid Metabolite	LC-MS/MS	Human Plasma	1-300 ng/mL	Sodium EDTA
Lovastatin; Lovastatin Hydroxy-Acid	LC-MS/MS	Human Plasma	0.1-20 ng/mL; 0.1-10 ng/mL	EDTA
Lovastatin; Lovastatin Hydroxy-Acid	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
Malondialdehyde	EIA	Human Plasma	20-500 ng/mL	K <sub>2</sub> EDTA
Mecamylamine	LC-MS/MS	Human Plasma	1-100 ng/mL	EDTA
Mesalamine	LC-MS/MS	Human Plasma	3-1000 ng/mL	K <sub>2</sub> EDTA
Metaxalone	LC-MS/MS	Human Plasma	25-5000 ng/mL	EDTA
Metformin	LC-MS/MS	Human Plasma	30-6000 ng/mL	EDTA
Methotrexate	LC-MS/MS	Human Plasma	2-400 ng/mL	K <sub>2</sub> EDTA
Methylphenidate	LC-MS/MS	Dog Plasma	0.25-10 ng/mL	Heparin
Methylphenidate	LC-MS/MS	Human Plasma	0.1-20 ng/mL	EDTA
Methylphenidate-d; Methylphenidate-L	LC-MS/MS	Human Plasma	0.5-50 ng/mL; 0.05-5 ng/mL	EDTA
Methylphenidate-d; Ritalinic Acid-d; Methylphenidate-L; Ritalinic Acid-L	LC-MS/MS	Rat Plasma	0.5-50 ng/mL; 5-500 ng/mL	Potassium Oxalate/ Sodium Fluoride
Methylphenidate-d; Ritalinic Acid-d; Methylphenidate-L; Ritalinic Acid-L	LC-MS/MS	Mouse Plasma	1-50 ng/mL; 5-500 ng/mL	Potassium Oxalate/ Sodium Fluoride
Methylprednisolone	LC-MS/MS	Dog Plasma	0.5-50 ng/mL	EDTA
Methyl Salicylate	LC-MS/MS	Human Plasma	1.75-50 ng/mL	Potassium Oxalate/ Sodium Fluoride
Metoclopramide	LC-MS/MS	Human Plasma	1-150 ng/mL	Heparin
Metopropol	LC-MS/MS	Human Plasma	1-500 ng/mL	K <sub>3</sub> EDTA
Metopropol	LC-MS/MS	Human Plasma	1-400 ng/mL	K <sub>2</sub> EDTA
Midazolam; Hydroxymidazolam	LC-MS/MS	Human Plasma	0.1-40 ng/mL; 0.1-20 ng/mL	Heparin
Misoprostol Acid	LC-MS/MS	Human Plasma	5-500 pg/mL	K <sub>2</sub> EDTA
Mometasone Furoate	LC-MS/MS	Human Plasma	0.25-25 pg/mL	EDTA
Monohydroxy-3-Butenyl Mercapturic Acid (MHBMA)	LC-MS/MS	Human Urine	0.1-20 ng/mL	N/A
Montelukast	LC-MS/MS	Human Plasma	3-800 ng/mL	Heparin
Morphine; Morphine-3-Glucuronide; Morphine-6-Glucuronide	LC-MS/MS	Human Serum	0.5-50 ng/mL; 10-1000 ng/mL; 1-100 ng/mL	N/A
Morphine; Morphine-3-Glucuronide; Morphine-6-Glucuronide	LC-MS/MS	Human Plasma	0.25-50 ng/mL; 10-1000 ng/mL	EDTA
Morphine; Morphine-6-Glucuronide	LC-MS/MS	Human Plasma	0.25-50 ng/mL; 1-200 ng/mL	K <sub>3</sub> EDTA
Moxifloxacin	LC-MS/MS	Human Plasma	0.5-50 ng/mL	Heparin
NAB-Total; NAT-Total	LC-MS/MS	Human Urine	2-200 pg/mL; 5-1000 pg/mL	N/A
Naftifine	LC-MS/MS	Human Plasma	1-200 ng/mL	K <sub>3</sub> EDTA
Nalbuphine	LC-MS/MS	Human Plasma	0.5- 50 ng/mL	EDTA
Naloxone	LC-MS/MS	Mouse Plasma	0.5-100 ng/mL	Heparin



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Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Naloxone-Free	LC-MS/MS	Human Plasma	0.2-40 ng/mL	Heparin
Naloxone-Total	LC-MS/MS	Human Plasma	10-2000 pg/mL	EDTA
Naloxone-3-Glucuronide	LC-MS/MS	Human Plasma	75-15000 pg/mL	Heparin
Naltrexone	LC-MS/MS	Dog Plasma	0.1-50 ng/mL	EDTA
Naltrexone	LC-MS/MS	Human Serum	0.1-50 ng/mL	N/A
Naltrexone; 6-Beta-Naltrexol	LC-MS/MS	Human Plasma	4-500 pg/mL; 4-1600 pg/mL	EDTA
Naltrexone; 6-Beta-Naltrexol	LC-MS/MS	Human Serum	10-2000 pg/mL	N/A
Niacin; Nicotinamide; Nicotinic Acid	LC-MS/MS	Human Plasma	25-5000 ng/mL; 10-2000 ng/mL; 5-1000 ng/mL	EDTA
Nicotine; Cotinine	LC-MS/MS	Human Serum	0.5-50 ng/mL; 1-200 ng/mL	N/A
Nicotine; Cotinine	LC-MS/MS	Human Plasma	0.2-10 ng/mL; 1-100 ng/mL	EDTA
Nicotine; Cotinine	LC-MS/MS	Human Plasma	1-50 ng/mL; 1-100 ng/mL	EDTA
Nicotine; Cotinine; <i>trans</i> -3'-Hydroxycotinine	LC-MS/MS	Human Plasma	0.2-10 ng/mL; 1-100 ng/mL	EDTA, Heparin
Nicotine; Cotinine; <i>trans</i> -3'-Hydroxycotinine	LC-MS/MS	Human Plasma	1-50 ng/mL; 5-500 ng/mL; 5-500 ng/mL	EDTA
Nicotine; Cotinine; <i>trans</i> -3'-Hydroxycotinine; Nicotine Glucuronide; Cotinine Glucuronide; <i>trans</i> -3'-Hydroxycotinine Glucuronide	LC-MS/MS	Human Urine	10-1000 ng/mL; 10-1000 ng/mL; 10-1000 ng/mL; 10-1000 ng/mL; 20-2000 ng/mL; 50-5000 ng/mL	N/A
Nicotine; Cotinine; <i>trans</i> -3'-Hydroxycotinine; Nicotine Glucuronide; Cotinine Glucuronide; <i>trans</i> -3'-Hydroxycotinine Glucuronide	LC-MS/MS	Human Urine	50-5000 ng/mL; 50-5000 ng/mL; 50-5000 ng/mL; 50-5000 ng/mL; 200-20000 ng/mL; 200-20000 ng/mL	N/A
NNAL-Total	LC-MS/MS	Human Urine	5-2000 pg/mL	N/A
NNN; NNAL	LC-MS/MS	Human Urine	0.2-40 pg/mL; 5-2000 pg/mL	N/A
Nordiazepam	LC-MS/MS	Human Plasma	10-500 ng/mL	EDTA
Norethindrone	LC-MS/MS	Human Plasma	0.05-10 ng/mL	K <sub>2</sub> EDTA
Norgestimate; Deacetylnorgestimate	LC-MS/MS	Human Plasma	20-2500 pg/mL	EDTA
Norgestrel (Reported as Levonorgestrel)	LC-MS/MS	Human Plasma	0.05-10 ng/mL	EDTA, Heparin
Octreotide	LC-MS/MS	Human Plasma	20-6000 pg/mL	K <sub>2</sub> EDTA
Olmesartan	LC-MS/MS	Human Plasma	2.5-500 ng/mL	EDTA
Olmesartan	LC-MS/MS	Human Plasma	2.5-1500 ng/mL	K <sub>3</sub> EDTA
Omeprazole	LC-MS/MS	Human Plasma	10-2000 ng/mL	Sodium Heparin
Omeprazole	LC-MS/MS	Human Plasma	2-700 ng/mL	EDTA
Omeprazole; 5-OH Omeprazole	LC-MS/MS	Human Plasma	4-2000 ng/mL; 1-500 ng/mL	K <sub>2</sub> EDTA
Ondansetron	LC-MS/MS	Human Plasma	0.5-100 ng/mL	EDTA
Orlistat	LC-MS/MS	Human Plasma	37.5-75000 pg/mL	EDTA
o-Toluidine	LC-MS/MS	Human Urine	20-1000 pg/mL	N/A
Oxybutynin [R]; Oxybutynin [S]; Desethyloxybutynin [R]; Desethyloxybutynin [S]	LC-MS/MS	Rat Plasma	1-250 ng/mL; 2.5-500 ng/mL	K <sub>2</sub> EDTA
Oxybutynin [R]; Oxybutynin [S]; Desethyloxybutynin [R]; Desethyloxybutynin [S]	LC-MS/MS	Human Plasma	0.05-10 ng/mL	EDTA

# Validated Assay List

Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Oxybutynin; Desethyloxybutynin	LC-MS/MS	Human Plasma	0.05-50 ng/mL	EDTA, Heparin
Oxybutynin; Desethyloxybutynin	LC-MS/MS	Human Plasma	0.05-10 ng/mL	K <sub>2</sub> EDTA
Oxycodone	LC-MS/MS	Human Plasma	0.2-50 ng/mL	EDTA, Heparin
Oxycodone; Noroxycodone	LC-MS/MS	Human Plasma	0.5-100 ng/mL; 0.02 - 5.00 ng/mL	Sodium EDTA
Oxycodone; Noroxycodone; Oxymorphone	LC-MS/MS	Human Plasma	0.5-125 ng/mL; 0.2-50 ng/mL; 0.02-5 ng/mL	K <sub>2</sub> EDTA
Paclitaxel	LC-MS/MS	Human Plasma	10-4000 ng/mL	K <sub>2</sub> EDTA
Paliperidone	LC-MS/MS	Human Plasma	0.1-20 ng/mL	K <sub>2</sub> EDTA
Pantoprazole	LC-MS/MS	Human Plasma	20-6000 ng/mL	Heparin
Paroxetine	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
Paroxetine	LC-MS/MS	Human Plasma	0.1- 50 ng/mL	EDTA
PEG-IFN alpha 2a (Pegasys)	EIA	Human Serum	250-6000 pg/mL	N/A
Phentermine	LC-MS/MS	Human Plasma	0.25-50 ng/mL	EDTA
Phenytoin	LC-MS/MS	Human Plasma	20-5000 ng/mL	K <sub>3</sub> EDTA
Pitavistatin	LC-MS/MS	Human Plasma	0.5-150 ng/mL	K <sub>2</sub> EDTA
Pitavistatin; Pitavastatin Lactone	LC-MS/MS	Human Plasma	0.5-150 ng/mL	EDTA
Pomalidomide	LC-MS/MS	Human Plasma	1-100 ng/mL	K <sub>2</sub> EDTA
Pramipexole	LC-MS/MS	Human Plasma	10-2000 pg/mL	K <sub>2</sub> EDTA
Pramipexole	LC-MS/MS	Human Plasma	30-7500 pg/mL	K <sub>2</sub> EDTA
Pravastatin; 3-Alpha-Hydroxy Pravastatin; Pravastatin Lactone	LC-MS/MS	Human Plasma	0.2-100 ng/mL	Heparin
Pravastatin; 3-Alpha Hydroxy Pravastatin; Pravastatin Lactone	LC-MS/MS	Human Urine	0.2-100 ng/mL	N/A
Prednisone; Prednisolone	LC-MS/MS	Human Plasma	0.4-100 ng/mL; 4-1000 ng/mL	EDTA
Progesterone	LC-MS/MS	Human Plasma	0.05-15 ng/mL	EDTA
Progesterone	LC-MS/MS	Human Serum	0.05-15 ng/mL	N/A
Promethazine	LC-MS/MS	Human Plasma	0.1-20 ng/mL	Heparin
Propylene Glycol	LC-MS/MS	Human Urine	250-25000 ng/mL	N/A
Prostaglandin E2 (PGE-2)	EIA	Human Urine	30-1500 pg/mL (STD curve 10-500 pg/mL, samples @ DF=3)	N/A
Pseudoephedrine	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
PTH 1-34	ELISA	Human Plasma	6-150 pg/mL	EDTA
PTH 1-84	IRMA	Human Plasma	4 (anchor point) 10-2000 pg/mL	EDTA
Quetiapine	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
Quetiapine	LC-MS/MS	Human Plasma	5-1000 ng/mL	EDTA
Quinidine	HPLC/FL	Human Plasma	0.05-10 ug/mL	Heparin
Quinidine	HPLC/FL	Human Plasma	2-250 ng/mL	Heparin
Rabeprazole	LC-MS/MS	Human Plasma	5-400 ng/mL	Heparin
Raloxifene	LC-MS/MS	Human Plasma	5-1000 pg/mL	Heparin
Ramipril; Ramiprilat	LC-MS/MS	Human Plasma	0.1-20 ng/mL	EDTA
Repaglinide	LC-MS/MS	Human Plasma	0.3-75 ng/mL	EDTA
Ribavirin	LC-MS/MS	Human Serum	5-2000 ng/mL	N/A

# Validated Assay List

Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Ribavirin	LC-MS/MS	Human Red Blood Cells	0.1-10 ug/mL	EDTA
Ribavirin	LC-MS/MS	Human Plasma	10-2000 ng/mL	EDTA
Rifampin	LC-MS/MS	Human Plasma	0.1-20 ug/mL	K <sub>2</sub> EDTA
Risedronate	LC-MS/MS	Human Serum	5-2500 pg/mL	N/A
Ritalinic Acid-d; Ritalinic Acid-L	LC-MS/MS	Human Plasma	5-500 ng/mL	EDTA
Ritonavir	LC-MS/MS	Human Plasma	5-1000 ng/mL	Sodium EDTA
R-Methadone; S-Methadone	LC-MS/MS	Human Plasma	20-4000 ng/mL	K <sub>2</sub> EDTA
R-Omeprazole; S-Omeprazole	LC-MS/MS	Human Plasma	0.5-100 ng/mL	EDTA
R-Warfarin; S-Warfarin	LC-MS/MS	Human Plasma	12.5-2500 ng/mL	EDTA
R-Warfarin; S-Warfarin	LC-MS/MS	Human Plasma	12.5-2500 ng/mL	Sodium Heparin
R-Warfarin; S-Warfarin	LC-MS/MS	Human Plasma	1-200 ng/mL	EDTA
Ropinirole	LC-MS/MS	Human Plasma	0.05-7.5 ng/mL	EDTA
Rosiglitazone	LC-MS/MS	Human Plasma	2.5-500 ng/mL	EDTA
Rosiglitazone; Desmethylrosiglitazone	LC-MS/MS	Human Plasma	1-400 ng/mL	EDTA
Rosuvastatin	LC-MS/MS	Human Plasma	0.2-100 ng/mL	EDTA
Rotigotine	LC-MS/MS	Human Plasma	0.01-2 ng/mL	EDTA
Scopolamine	LC-MS/MS	Human Plasma	5-500 pg/mL	EDTA
sICAM	ELISA	Human Plasma	12.5 - 1000 ng/mL	Heparin
Sildenafil; Desmethylsildenafil	LC-MS/MS	Human Plasma	1-400 ng/mL	EDTA
Simvastatin; Simvastatin Hydroxy Acid	LC-MS/MS	Human Plasma	0.1-20 ng/mL	EDTA
Sitagliptin	LC-MS/MS	Human Plasma	2.5-500 ng/mL	EDTA
Solifenacin	LC-MS/MS	Human Plasma	0.1-20 ng/mL	EDTA
Soluble Leptin Receptor	ELISA	Human Plasma	8-80 ng/mL	EDTA
S-Phenyl Mercapturic Acid	LC-MS/MS	Human Urine	0.02-20 ng/mL	N/A
S-PMA; SBMA	LC-MS/MS	Human Urine	25-6250 pg/mL, 100-25000 pg/mL	N/A
Sumatriptan	LC-MS/MS	Human Plasma	0.1-15 ng/mL	K <sub>2</sub> EDTA
Sumatriptan	LC-MS/MS	Human Plasma	0.5-100 ng/mL	K <sub>2</sub> EDTA
Tacrolimus	LC-MS/MS	Human Whole Blood	0.5-50 ng/mL	K <sub>2</sub> EDTA
Tadalafil	LC-MS/MS	Human Plasma	1-400 ng/mL	EDTA
Telaprevir	LC-MS/MS	Human Plasma	0.1-20 ug/mL	K <sub>2</sub> EDTA
Telmisartan	LC-MS/MS	Human Plasma	0.5-100 ng/mL	EDTA
Tenofovir	LC-MS/MS	Human Plasma	5-750 ng/mL	Heparin
Testosterone; Methyltestosterone	LC-MS/MS	Human Plasma	0.05-10 ng/mL	N/A
Tetrahydrocannabinol (THC); THC-OH; THC-COOH	LC-MS/MS	Human Plasma	0.05-10 ng/mL; 0.05-2 ng/mL; 0.75-10 ng/mL	Heparin
Thalidomide	LC-MS/MS	Human Plasma	20-2000 ng/mL	Heparin
Theophylline	LC-MS/MS	Human Plasma	100-20000 ng/mL	EDTA
TNF alpha	EIA	Human Plasma	1-32 pg/mL	Lithium Heparin
Tolterodine; 5-Hydroxymethyl Tolterodine	LC-MS/MS	Human Plasma	15-5000 pg/mL; 15-5000 pg/mL	EDTA

# Validated Assay List

Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Topiramate	LC-MS/MS	Human Plasma	10-1000 ng/mL	EDTA
Triamcinolone Acetonide	LC-MS/MS	Human Plasma	50-4000 pg/mL	EDTA
Valsartan	LC-MS/MS	Human Plasma	15-7000 ng/mL	EDTA
Valsartan	LC-MS/MS	Human Serum	15-7000 ng/mL	N/A
Verapamil; Norverapamil	LC-MS/MS	Human Plasma	2.5-250 ng/mL	Heparin
Verapamil; Norverapamil	LC-MS/MS	Human Plasma	1.3-250 ng/mL	Heparin
Voriconazole	LC-MS/MS	Human Plasma	5-2000 ng/mL	EDTA
Zidovudine; Abacavir	LC-MS/MS	Human Plasma	10-3000 ng/mL; 10-3000 ng/mL	EDTA
Zileuton; A66193	LC-MS/MS	Human Plasma	0.05-10 ug/mL	EDTA
Zinc	ICP/MS	Human Serum	300-5000 ng/mL	N/A
Zoledronate	LC-MS/MS	Human Serum	0.5-100 ng/mL	N/A
Zoledronate	LC-MS/MS	Human Urine	0.5-100 ng/mL	N/A
Zolpidem	LC-MS/MS	Human Plasma	1-250 ng/mL	EDTA
Zonisamide	LC-MS/MS	Human Serum	30-3000 ng/mL	N/A

# Biomarker Assays

Compound Name	Technique	Species/Matrix	Range	Anti-coag.
Active Ghrelin	ELISA	Human Plasma	50-2000 pg/mL	K <sub>2</sub> EDTA
Active GLP-1	ELISA	Human Plasma	2-100 pM	K <sub>2</sub> EDTA
C-Peptide	RIA	Human Serum	0.05-4 ng/mL	N/A
IGF-1	ELISA	Human Plasma	0.09-6 ng/mL	K <sub>2</sub> EDTA
IGFBP-3	ELISA	Human Plasma	0.7-40 ng/mL	K <sub>2</sub> EDTA
IL-6	ELISA	Human Serum	3.12-300 pg/mL	N/A
PGE-2	ELISA	Human Urine	10-500 pg/mL	N/A
PTH 1-34	ELISA	Human Plasma	6-150 pg/mL	K <sub>3</sub> EDTA
PTH 1-84	RIA	Human Plasma	10-2000 pg/mL	K <sub>3</sub> EDTA
Total Adiponectin	ELISA	Human Serum	3.93-250 ng/mL	N/A

## Biosimilar Qualified Assays

<b>PK Assays - Measurement of Drug in Biological Matrices</b>	<b>Technique</b>	<b>Species/Matrix</b>	<b>Range</b>	<b>Anti-coag.</b>
Cetuximab	ELISA	Human Serum	0.3-50 ug/mL	N/A
Rituximab	ELISA	Human Serum	1-50 ug/mL	N/A
Peg-Filgrastim (Neulasta)	ELISA	Human Serum	0.2-10 ng/mL	N/A
Exendin-4	ELISA	Human Plasma	20-400 pg/mL	Heparin
Etanercept (Enbrel)	ELISA	Human Serum	20-1000 ng/mL	N/A
Adalimumab (Humira)	ELISA	Human Serum	80-8000 ng/mL	N/A

## Biosimilar Qualified Assays

<b>ADA Assays - Measurement of Anti-drug Antibody Assays</b>	<b>Technique</b>	<b>Species/Matrix</b>	<b>Sensitivity</b>	<b>Anti-coag.</b>
Cetuximab ADA assay	ELISA	Human Serum	10 ng/mL	N/A
Rituximab ADA assay	ELISA	Human Serum	10 ng/mL	N/A
PTH (1-34) ADA assay	ELISA	Human Serum	206 ng/mL	N/A

# Celerion Solution

## **Over 40 years of experience**

conducting First-in-Human, clinical Proof-of-Concept, cardiovascular safety services (TQT, robust QT), ADME and NDA-enabling clinical pharmacology studies

## **Global presence with 600 beds**

at three global Celerion clinical facilities, in addition to a network of audited specialty sites in North America, Europe, South Korea and Singapore. Celerion scans the globe to find solutions to clients' early clinical research needs

## **Extensive expertise**

on modeling and simulation, study design, medical writing (protocols and reports), clinical data sciences, biostatistics, and PK/PD analysis

## **Highly qualified scientists**

assist in designing robust, efficient clinical studies as well as analyzing and interpreting data both during and post clinical conduct

## **Bioanalytical services**

at two global locations for method development and validation for small and large molecule assays for the analysis of drugs, metabolites, and biomarkers in a broad range of biological fluids

## **Drug Development Services team**

provides regulatory, drug development and program management support to complement Celerion's service offering

