

Indiana University School of Medicine  
 Department of Medical and Molecular Genetics  
 975 W. Walnut Street, IB 350, Indianapolis, IN. 46202  
 Phone: 317-278-6486 Fax: 317 278-1616 CAP#1678930/CLIA#15D0647198

*Affix label here*

**SHIP SPECIMENS TO: 975 W. Walnut Street, IB 350, Indianapolis, IN 46202**

PATIENT INFORMATION				BILLING INFORMATION	
Last Name		First Name		<b>Attach copy of demographics, insurance I.D. Cards (front and back)</b>	
Social Security No.		DOB	Sex M <input type="checkbox"/> F <input type="checkbox"/>		
Mailing address				Medicare No.	Medicaid No.
Primary Phone		Outpatient / Inpatient	MRN	<b>Primary Insurance</b>	
Patient Medications (including aspirin, cough medicine, vitamins in amounts greater than standard daily requirements):				Primary Insurance	Policy No.
				Group Name	Group No.
				Address	
Diet: <input type="checkbox"/> Normal <input type="checkbox"/> Special / Please specify:				Insured Name	Relationship
PHYSICIAN INFORMATION				Secondary Insurance	
Ordering Physician		Physician Phone		Secondary Insurance	Secondary Ins. No.
Physician address				Group Name	Group No.
Physician Fax				Address	
				Physician Pager	Insured Name

SPECIMEN INFORMATION	LAB USE ONLY
ICD-9 Code/Diagnosis/Reason for Referral:	Date/Time Collected:
	Date/Time Received: _____
	Received By: _____
<input type="checkbox"/> First Morning <input type="checkbox"/> Random	

**Circle/mark the checkbox for your requested testing from the list below:**

Check for order	CPT code(s)	Test	Sample type*		Specimen Volume (ml)	
			preferred	other acceptable	preferred	minimum
	83919, 82570	Urine Organic Acid Screen	U		10	4
	82379	Free/Total Carnitine Analysis	PH	SE, PE	1	0.2
	82017	Acyl carnitine Analysis	PH	SE	1	0.1
	82139, 82570	Urine Amino Acid Analysis	U		1	0.1
	82139	Plasma Amino Acid Analysis	PH		1	0.1
	82139	CSF Amino Acid Analysis	C		0.5	0.1
	83921	Serum Methylmalonic Acid Analysis	SE	PH, PE	0.5	0.1
	84030, 84510	Phenylalanine & Tyrosine Blood Spot Analysis	BSP		<b>2 full spots</b>	

**\*Sample type Key:** \*\*PH Plasma, heparin (Green top)    SE Serum (Red top)    PE Plasma, EDTA (Lavender top)    BSP Blood spot (Whatman 903)  
 \*\*Sodium heparin plasma is preferred, but lithium heparin plasma is acceptable    C Cerebral Spinal Fluid    U Urine

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**SPECIMEN HANDLING: (Specimens received in lab Monday-Friday ONLY)**

<b>Collection</b>	<b>PLASMA/SERUM:</b>	<ul style="list-style-type: none"> <li>Separate and freeze sample as soon as possible</li> <li>Samples stored as whole blood &gt;4 hours are NOT ACCEPTABLE for amino acid analysis</li> <li>Gel-based separation tubes (PSTs or SSTs) are NOT ACCEPTABLE</li> </ul>
	<b>URINE:</b>	<ul style="list-style-type: none"> <li>Collect random clean catch urine in a container free of preservatives or additives</li> <li>Freeze as soon as possible</li> </ul>
	<b>CSF:</b>	<ul style="list-style-type: none"> <li>Plasma amino acid analysis should be collected and sent concurrently with all CSF amino acid analyses</li> <li>Collect CSF in a tube free of preservatives and store frozen as soon as possible</li> <li>CSF should appear clear and free of pink/yellow/red coloration</li> <li>Blood/plasma contaminated CSF samples will be analyzed but the result will likely be uninterpretable</li> </ul>
	<b>BLOOD SPOT:</b>	<ul style="list-style-type: none"> <li>Use only Whatman 903 type blood spot cards</li> <li>Clean finger/heel prior to collection to remove lotions, soaps, powders or other foreign material</li> <li>Generate a single large blood drop prior to spotting. The goal is to fill a circle entirely with 1 drop.</li> <li>Allow cards to dry completely (at least 4 hours) prior to shipment.</li> </ul>
<b>Shipping</b>	<ul style="list-style-type: none"> <li>A requisition form must be sent with each specimen.</li> <li>Label all containers and forms with the patient's name, date of birth, MRN, and date of collection.</li> <li>Ship frozen samples by overnight courier in an insulated container with 3 -5 lbs dry ice.</li> <li>Serum methylmalonic acid and blood spot specimens may be shipped at ambient temperature if arriving within 1 week of collection.</li> <li>Unused portions of specimens are stored in lab for a minimum of 2 months.</li> </ul>	

**Analytes Reported by Test:**

CSF Amino Acid Analysis	Urine Amino Acid Analysis	Plasma Amino Acid Analysis	Plasma Acylcarnitine Analysis
1. Alanine	1. 3-Methylhistidine	1. Alanine	1. Acetyl (C2)
2. Arginine	2. Alanine	2. Alloisoleucine	2. Propionyl (C3)
3. Asparagine	3. Alloisoleucine	3. Alpha-aminoadipate	3. Butyryl (C4)
4. Aspartate	4. Alpha-aminoadipate	4. Alpha-amino-n-butyrate	4. Pentenoyl (C5:1)
5. Creatine	5. Alpha-amino-n-butyrate	5. Arginine	5. Pentanoyl (C5)
6. Creatinine	6. Anserine	6. Argininosuccinate	6. Hexanoyl (C6)
7. Citrulline	7. Arginine	7. Asparagine	7. Octenoyl (C8:1)
8. Glutamate	8. Argininosuccinate	8. Aspartate	8. Octanoyl (C8)
9. Glutamine	9. Asparagine	9. Citrulline	9. Decadienoyl (C10:2)
10. Guanidinoacetate	10. Aspartate	10. Creatine	10. Decenoyl (C10:1)
11. Glycine	11. Beta-alanine	11. Creatinine	11. Decanoyl (C10)
12. Histidine	12. Beta-Aminoisobutyrate	12. Glutamate	12. Dodecenoyl (C12:1)
13. Isoleucine	13. Citrulline	13. Glutamine	13. Dodecanoyl (C12)
14. Leucine	14. Creatine	14. Guanidinoacetate	14. Tetradecadienoyl (C14:2)
15. Lysine	15. Creatinine	15. Glycine	15. Tetradecenoyl (C14:1)
16. Methionine	16. Cystathionine	16. Histidine	16. Tetradecanoyl (C14)
17. Ornithine	17. Cystine	17. Homocitrulline	17. Hexadecenoyl (C16:1)
18. Phenylalanine	18. Delta-aminolevulinat	18. Homocystine	18. Hexadecanoyl (C16)
19. Pipelic Acid	19. Gamma-amino-n-butyrate	19. Hydroxyproline	19. Octadecadienoyl (C18:2)
20. Proline	20. Glutamate	20. Isoleucine	20. Octadecenoyl (C18:1)
21. Serine	21. Glutamine	21. Leucine	21. Octadecanoyl (C18)
22. Sulfocysteine	22. Guanidinoacetate	22. Lysine	22. Forminoglutamate (FIGLU)
23. Taurine	23. Glycine	23. Methionine	23. Malonyl (C3:DC)
24. Threonine	24. Histidine	24. Ornithine	24. Methylmalonyl/Succinyl (C4:DC)
25. Tryptophan	25. Homocitrulline	25. Phenylalanine	25. Glutaryl (C5:DC)
26. Tyrosine	26. Homocystine	26. Pipelic Acid	25. 3-Methylglutaryl (C6:DC)
27. Valine	27. Hydroxyproline	27. Proline	26. Hydroxybutyryl (C4:OH)
	28. Isoleucine	28. Sarcosine	27. Hydroxypentanoyl (C5:OH)
	29. Leucine	29. Serine	28. 3-Hydroxydecenoyl (C10:10H)
	30. Lysine	30. Taurine	29. Hydroxytetradecanoyl (C14:OH)
	31. Methionine	31. Threonine	30. Hydroxyhexadecanoyl (C16:10H)
	32. Ornithine	32. Tryptophan	31. Hydroxyhexadecanoyl (C16:OH)
	33. Phenylalanine	33. Tyrosine	32. Hydroxyloley (C18:10H)
	34. Proline	34. Valine	33. Hydroxystearoyl (C18:OH)
	35. Sarcosine		
	36. Serine		
	37. Sulfocysteine		
	38. Taurine		
	39. Threonine		
	40. Tryptophan		
	41. Tyrosine		
	42. Valine		