



# SERVICES - 2015

## PER HOUR ANALYSIS

### Labor

Service	Description
Method development and validation	Development and/or validation of new analytical method, including literature review, experiment design, data evaluation and report preparation. Subsequent analysis with new methods quoted per sample.
Training and consulting	Training on analytical equipment; on-site consulting.
Expert testimony	Protection against litigation or support during litigation.

### Equipment time

Service	Description
HPLC	Agilent 1200 series Rapid Resolution HPLC.



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## PER SAMPLE ANALYSIS

Analyte	Method
4-Aminobenzoic acid (PABA)	HPLC
5-Hydroxytryptophan (5-HTP)	HPLC
5-Methyltetrahydrofolate (MTHF)	HPLC
Acetic Acid	HPLC
Adenosylcobalamin (Coenzyme B12)	HPLC
Anthocyanins (as equivalent of cyanidin-3-O-rutinoside or cyanidin-3-O-glucoside)	HPLC
L-Arginine	HPLC
Ascorbic acid (Vitamin C)	HPLC
Ascorbic acid (after reduction of DHAA)	HPLC
Ascorbyl palmitate	HPLC
Astaxantin	HPLC
Astaxantin (after de-esterification)	HPLC
Bacoside A saponins	HPLC
Benfotiamine	HPLC
L-Biopterin	HPLC
Biotin (Vitamin B7)	HPLC
Bixin	HPLC
Caffeine	HPLC
Caftaric acid	HPLC
Calcium pantothenate (Vitamin B5)	HPLC
Carnosic acid	HPLC
L-carnosine	HPLC
$\beta$ -carotene (Vitamin A)	HPLC
Catechin	HPLC
Chlorogenic acid	HPLC
Cholecalciferol (Vitamin D3)	HPLC



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Analyte	Method
Cholesterol	HPLC
Choline	HPLC
Choline bitartrate	HPLC
Chondroitin sulfate	HPLC
Coenzyme Q10	HPLC
Coenzyme Q10 (after alcohol/hexane extraction)	HPLC
Cichoric acid	HPLC
Citric acid	HPLC
Creatine	HPLC
Creatine monohydrate	HPLC
Curcumin	HPLC
Cyanidin	HPLC
Cyanuric acid	HPLC
Cynarin	HPLC
Cyanocobalamin (Vitamin B12)	HPLC
Daidzein	HPLC
Daidzin	HPLC
Delphinidin	HPLC
Demethoxy-curcumin	HPLC
Echinacoside	HPLC
EGCG	HPLC
Ellagic acid	HPLC
Ergocalciferol (Vitamin D2)	HPLC
Erythritol	HPLC
Folic acid (Vitamin B9)	HPLC
Folinic acid	HPLC
Gallic acid	HPLC
6-gingerol	HPLC



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Analyte	Method
8-gingerol	HPLC
10-gingerol	HPLC
Genistein	HPLC
Genistin	HPLC
Glucosamine	HPLC
L-Glutamic acid	HPLC
Glutathione ox./red.	HPLC
Glycitein	HPLC
Glycitin	HPLC
Hesperidin	HPLC
Hydroxycobalamin (Vitamin B12)	HPLC
Hydroxycobalamin acetate (Vitamin B12)	HPLC
Hyperforin	HPLC
Hypericin	HPLC
Idebenone	HPLC
Inositol	HPLC
Isorhamnetin	HPLC
Kaempferol	HPLC
Lactic acid	HPLC
Leucovorin calcium	HPLC
$\alpha$ -Lipoic acid	HPLC
Lipoic acid (total, after base catalyzed depolymerization)	HPLC
Lutein	HPLC
Lycopene	HPLC
Lycopene in gelatin or alginate based beadlets	HPLC
Malic acid	HPLC
Malvinidin	HPLC
Melamine	HPLC



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Analyte	Method
Melatonin	HPLC
Menadione (Vitamin K3)	HPLC
Menaquinone 4 (Vitamin K2-4)	HPLC
Menaquinone 7 (Vitamin K2-7)	HPLC
Methylcobalamin (Vitamin B12)	HPLC
Monosodium glutamate (as glutamic acid)	HPLC
Naringin	HPLC
Niacinamide	HPLC
Nicotine	HPLC
Nicotinic acid (Vitamin B3)	HPLC
Norbixin	HPLC
Oxalacetic acid	HPLC
Pantothenic acid (Vitamin B5)	HPLC
Pelargonidin	HPLC
Peonidin	HPLC
Petunidin	HPLC
Phylloquinone (Vitamin K1)	HPLC
Pseudohypericin	HPLC
Pterostilbene	HPLC
Pyridoxal 5-phosphate (Vitamin B6)	HPLC
Pyridoxine HCl (Vitamin B6)	HPLC
Pyroglutamic acid	HPLC
Quercetin	HPLC
Quercetin dihydrate	HPLC
Quinic acid	HPLC
Resveratrol	HPLC
Retinyl palmitate (Vitamin A)	HPLC
Riboflavin (Vitamin B2)	HPLC



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Analyte	Method
Riboflavin-5' phosphate salt (Vitamin B2)	HPLC
Rutin	HPLC
6-shogaol	HPLC
Sylimarin	HPLC
Synephrine	HPLC
Tetrahydro-L-Biopterin	HPLC
L-Theanine	HPLC
Thiamine (Vitamin B1)	HPLC
$\alpha$ -Tocopherol (Vitamin E)	HPLC
$\alpha$ -Tocopheryl acetate (Vitamin E)	HPLC
$\alpha$ -Tocopheryl succinate (Vitamin E succinate)	HPLC
TPGS	HPLC
Ursolic acid	HPLC
Vinpocetine	HPLC
Withaferin A	HPLC



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## VITAMINS

### Water soluble vitamins

Analyte	Method	
Vitamin B1	Benfotiamine	HPLC
	Thiamine	HPLC
Vitamin B2	Riboflavin	HPLC
	Riboflavin-5' phosphate salt	HPLC
Vitamin B3	Niacinamide	HPLC
	Niacin (Nicotinic acid)	HPLC
Vitamin B5	Calcium pantothenate	HPLC
	Pantothenic acid	HPLC
Vitamin B6	Pyridoxine HCl	HPLC
	Pyridoxal 5-phosphate	HPLC
Vitamin B7	Biotin	HPLC
Vitamin B9	Folic acid	HPLC
	Leucovorin calcium	HPLC
	5-Methyltetrahydrofolate (MTHF) Ca salt	HPLC
Vitamin C	Ascorbic acid	HPLC
	Ascorbic acid (after reduction of DHAA)	HPLC
	Ascorbyl palmitate	HPLC
Vitamin B12	Adenosylcobalamin (Coenzyme B12)	HPLC
	Cyanocobalamin	HPLC
	Hydroxycobalamin	HPLC
	Methylcobalamin	HPLC



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### Fat soluble vitamins

Analyte	Method	
<b>Vitamin A</b>	Beta carotene	HPLC
	Retinyl palmitate	HPLC
	Retinyl palmitate with digestion	HPLC
<b>Vitamin D</b>	Cholecalciferol (D3)	HPLC
	Ergocalciferol (D2)	HPLC
<b>Vitamin E</b>	$\alpha$ -Tocopherol	HPLC
	$\alpha$ -Tocopheryl succinate	HPLC
<b>Vitamin K</b>	Phylloquinone (K1)	HPLC
	Menaquinone 4 (K2-4)	HPLC
	Menaquinone 7 (K2-7)	HPLC
	Menadione (K3)	HPLC





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### BUNDLED TESTS

Anthocyanidins (cyanidin, delphinidin, malvinidin, pelargonidin, peonidin and petunidin)	HPLC
Citrus bioflavonoids (hesperidin, naringin and rutin)	HPLC
Echinacea (caftaric acid, chlorogenic acid, cichoric acid, cynarin and echinacoside)	HPLC
Ginger (6-gingerol, 8-gingerol, 10-gingerol and 6-shogaol)	HPLC
Ginkgo biloba (isorhamnetin, kaempferol and quercetin)	HPLC
Goldenseal (hydrastine, berberine and palmitine)	HPLC
Green tea catechins (epigallocatechin, catechin, epicatechin, epigallocatechin gallate and epicatechin gallate)	HPLC
Soy isoflavones (daidzein, daidzin, genistein, genistin, glycitein and glycitin)	HPLC
Turmeric (curcumin, demethoxy-curcumin, bis-demethoxy-curcumin)	HPLC
Hops (humulone, cohumulone, adhumulone, lupulone, colupulone, adlupulone, isocohumulone, isohumulone and isoadhumulone)	HPLC
Total tocopherols ( $\alpha$ , $\beta$ , $\gamma$ and $\delta$ )	HPLC



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## USP TESTS

Test	Method
2-pyrrolidinone by HPLC	USP monograph
Acid value	USP <401>
Arginine HCl assay by titration	USP monograph
Degree of substitution	USP monograph
Ester value	USP <401>
Formic acid	USP monograph
General identification tests	USP <197>
Hydroxyl value	USP <401>
Iodine value	USP <401>
Impurities by TLC	USP <466>
K value	USP monograph
Limit of aldehydes	USP monograph
Limit of hydrazine by TLC	USP monograph
Limit test for chloride or sulfate	USP <221>
Loss on drying	USP <731>
Melting range/melting point	USP <741>
Nitrogen determination by Kjeldahl method	USP <791>
Nitrite titration	USP <451>
pH, aqueous solution	USP <791>
pH, non-aqueous solution	USP <281>
Peroxides	USP monograph
Purity by TLC	USP monograph
Residue on ignition	USP <281>
Saponification value	USP <401>
Sodium glycolate	USP monograph
Settling volume	USP monograph



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Test	Method
Specific gravity	USP <841>
Spectrometric identification	USP <197>
TLC identification and purity	USP <201>
Water soluble substances	USP monograph



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## OTHER TESTS

Test	Method
Crude fat	AOAC 991.36
Dextrose equivalent	Lane and Eynon
Dietary fiber (insoluble, soluble and total by calculation)	AOAC 2011.25
Dietary fiber (total)	AOAC 2009.01
Environmental chamber (controlled temperature and humidity)	ICH
NLEA	
ORAC - Total Antioxidant Activity	AOAC 2012.23
Polyphenols (total)	Folin-C
Qualitative, "fingerprint" analysis of a single ingredient for identity test	HPLC
Qualitative, "fingerprint" analysis of a botanical for identity test	HPLC
Sulforaphane potency	HPLC
Titrateble acidity	Titration
Water activity	

### Turn around times:

Standard: 5-7 days

Expedited (50% additional charge): 3-4 days

Rush (100% additional charge): 2 days

Please contact us directly for inquiries regarding any service not appearing in this price list.