US BioTek LABORATORIES · PATIENT REPORT
16020 Linden Av N Shoreline WA, 98133 • cservice@usbiotek.com • +1 206 365 1256

Clinical Laboratory Improvement Amendments

25303-0077

*** US BioTek** US BioTek. 16020 Linden Av N, Shoreline WA 98133

Lab ID
Patient ID PAT-100009
Ext ID 25303-0077

Test Patient
Sex: Female • 45yrs • 01-Jan-80

RECEIVED
30-Oct-25

ENVIRONMENTAL TOXINS PANEL
Specimen type - Urine, Spot

Collected
20-Oct-25

CYSTEINE DERIVATIVES

TEST	RESULT	H/L	REFERENCE	UNITS
N-Acetyl (3,4-Dihydroxybutyl) cysteine (NADB)	288.00	H	(<250.00)	ug/gCR
N-Acetyl (carbomoylethyl) cysteine	16.00		(<190.00)	ug/gCR
N-Acetyl phenyl cysteine (SPMA)	<DL		(<5.00)	ug/gCR
N-Acetyl (propyl) cysteine (NAPR)	<DL		(<25.00)	ug/gCR

ENVIRONMENTAL PHENOLS

TEST	RESULT	H/L	REFERENCE	UNITS
4-Nonylphenol	5.30	H	(<3.00)	ug/gCR
Bisphenol A (BPA)	7.21	H	(<4.00)	ug/gCR
Triclosan (TCS)	4.30		(<50.00)	ug/gCR

HERBICIDES (Synthetic Auxins)

TEST	RESULT	H/L	REFERENCE	UNITS
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.02		(<1.00)	ug/gCR

HERBICIDES (Photosynthetic Inhibitors)

TEST	RESULT	H/L	REFERENCE	UNITS
Atrazine	0.66	H	(<0.50)	ug/gCR
Atrazine mercapturate	0.16		(<0.50)	ug/gCR

HERBICIDES (EPSP Inhibitors)

TEST	RESULT	H/L	REFERENCE	UNITS
Aminomethylphosphonic Acid (AMPA)	0.92		(<2.00)	ug/gCR
Glyphosate	55.9	H	(<40.0)	ppb

METHYLTERT-BUTYL ETHER (MTBE) EXPOSURE

TEST	RESULT	H/L	REFERENCE	UNITS
alpha-HydroxyIsoButyrate	0.11		(<6.35)	ug/mgCR

MITOCHONDRIAL MARKERS

TEST	RESULT	H/L	REFERENCE	UNITS
Tiglylglycine	2.67		(<10.00)	ug/gCR

Lab Director: Jillian Harrington, PhD, HCLD (ABB). CLIA#99D2282774

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PARABENS

TEST	RESULT	H/L	REFERENCE	UNITS
Benzylparaben	3.66	H	(<2.00)	ug/gCR
Butylparaben	<DL		(<1.00)	ug/gCR
Ethylparaben	<DL		(<7.00)	ug/gCR
Methylparaben	<DL		(<120.00)	ug/gCR
ParahydroxyBenzoic Acid	0.06		(<0.57)	mmol/molCR
Propylparaben	<DL		(<35.00)	ug/gCR

PESTICIDES

TEST	RESULT	H/L	REFERENCE	UNITS
3-Phenoxybenzoic Acid (3PBA)	0.45		(<3.00)	ug/gCR
Diethyl Phosphate (DEP)	9.90	H	(<9.00)	ug/gCR
Diethyldithiophosphate (DEDTP)	<DL		(<0.20)	ug/gCR
Diphenyl phosphate (DPP)	<DL		(<2.50)	ug/gCR
Diethylthiophosphate (DETP)	<DL		(<1.00)	ug/gCR

PFA's

TEST	RESULT	H/L	REFERENCE	UNITS
Perfluorobutanoic acid (PFBA)	0.35		(<1.20)	ug/gCR
Perfluorooctanoic Acid (PFOA)	0.19	H	(<0.10)	ug/gCR
Perfluorooctane Sulphonic Acid (PFOS)	0.23		(<0.60)	ug/gCR

PHTHALATES

TEST	RESULT	H/L	REFERENCE	UNITS
Butyl Benzyl phthalate (BBP)	0.20		(<1.00)	ug/gCR
Mono-Benzyl phthalate (mBzP)	0.50		(<3.00)	ug/gCR
Mono-n-Butyl phthalate (mBP)	65.00	H	(<55.00)	ug/gCR
Mono (3-carboxypropyl) phthalate (mCPP)	<DL		(<31.00)	ug/gCR
Mono-ethyl phthalate (MEtP)	23.00		(<100.00)	ug/gCR
Mono-2-ethylhexyl phthalate (MEHP)	<DL		(<11.00)	ug/gCR
Mono-(2-ethy-5-hydroxyhexyl) phthalate (MEHHP)	<DL		(<12.00)	ug/gCR
Mono-(2-ethy-5-oxohexyl) phthalate (MEOHP)	<DL		(<27.00)	ug/gCR
Mono-n-octyl phthalate (mOP)	<DL		(<2.00)	ug/gCR
Phthalic Acid	0.07		(<170.00)	ug/gCR
Quinolinic Acid	8.0		(<9.1)	mmol/molCR

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VOLATILE ORGANIC COMPOUNDS

TEST	RESULT	H/L	REFERENCE	UNITS
2-hydroxyethyl-mercapturic acid (HEMA)	<DL		(<5.00)	ug/gCR
Mandelic Acid	0.10		(<340.0)	ug/gCR
Phenylglyoxylic Acid	0.16		(<300.0)	ug/gCR
Mandelic Acid + Phenylglyoxylic Acid	0.26		(<610.0)	ug/gCR

BENZENES EXPOSURE

TEST	RESULT	H/L	REFERENCE	UNITS
t,t-Muconic Acid	0.22	H	(<0.12)	mmol/molCR
3,4-Dimethylhippuric Acid	0.00		(<0.01)	mmol/molCR

TOLUENES EXPOSURE

TEST	RESULT	H/L	REFERENCE	UNITS
Benzoic Acid	4.20		(<9.30)	mmol/molCR
Hippuric Acid	209.0		(<603.0)	mmol/molCR

XYLENES EXPOSURE

TEST	RESULT	H/L	REFERENCE	UNITS
2-Methylhippuric Acid	0.20		(<0.04)	mmol/molCR
3-Methylhippuric Acid	0.30	H	(<0.11)	mmol/molCR

TEST	RESULT	H/L	REFERENCE	UNITS
Creatinine, Urine	8.00		(2.47-19.20)	mmol/L

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Cysteine Derivatives Comment

N-ACETYL (3,4-Dihydroxybutyl) CYSTEINE (NADB) ELEVATED:

NADB is a metabolite that indicates exposure to 1,3-butadiene.

Source of exposure: synthetic rubber, car exhaust fumes, fuel combustion, cigarette smoke.

Symptoms: Acute effects include eye, nose, and throat irritation, and at high concentrations, central nervous system effects such as headache, nausea, blurred vision, and unconsciousness. Long-term exposure is associated with an increased risk of certain cancers, particularly leukemia, based on human and animal studies. Treatment: Regarding medical treatment, there is no specific treatment; and largely involves supportive care, with a focus on removing contaminated clothing, ensuring ventilation, and providing respiratory support.

Environmental Phenols Comment

4-NONYLPHENOL ELEVATED:

4-Nonylphenol is a degradation product of nonylphenol ethoxylates, used widely in industrial detergents, plastics, paints, and personal care products. It is classified as an endocrine-disrupting chemical due to its estrogenic activity and affinity for estrogen receptors.

Health implications: Chronic exposure may disrupt hormonal balance, impair reproductive development, and contribute to thyroid and metabolic dysregulation.

Symptoms: Hormonal irregularities, early puberty, reproductive issues, fatigue, and cognitive disturbances.

Treatment considerations: Minimize exposure to industrial and consumer products containing nonylphenol derivatives. Support detoxification pathways with antioxidant-rich nutrition (e.g., sulforaphane, glutathione), liver support, and hydration.

ATRAZINE ELEVATED:

Atrazine is a chlorinated herbicide heavily used in corn production. It is a persistent environmental contaminant found in groundwater and rainwater. Atrazine is a known endocrine disruptor.

Health implications: Atrazine interferes with hypothalamic-pituitary-gonadal (HPG) axis signaling and may cause reproductive abnormalities, particularly in males. It also induces oxidative stress and inflammation.

Symptoms: Low libido, menstrual irregularities, infertility, mood changes, and immune dysregulation.

Treatment considerations: Limit exposure through filtered water and organic foods. Use detox support protocols including sulforaphane, zinc, and selenium. Consider endocrine system support with adaptogens and hormone-balancing therapies.

Herbicides Comment

GLYPHOSATE ELEVATED:

Glyphosate is a widely used herbicide that poses health risks, especially from large or long-term exposure, .

Health implications: Some health authorities classify glyphosate as a probable carcinogen.

Symptoms: Short-term exposure to products can cause eye, skin, and respiratory irritation, along with nausea and vomiting if swallowed.

Treatment considerations: Focus on microbiome repair, liver support, antioxidant nutrients, and avoidance of glyphosate-laden foods and environments.

Parabens Comment

BENZYLPARABEN ELEVATED:

Benzylparaben is a less common paraben, but still used in some cosmetic and pharmaceutical formulations.

Health implications: It exhibits estrogenic properties and may compound the hormonal burden when combined with other parabens. Research is more limited but suggests potential for endocrine disruption and dermal sensitization.

Symptoms: Hormonal imbalances, skin irritation, unexplained fatigue.

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Treatment considerations: Minimize exposure to synthetic preservatives. Support detoxification and antioxidant systems. Evaluate total endocrine-disrupting chemical (EDC) burden if multiple parabens are elevated.

PFAS Comment

PERFLUOROOCTANOIC ACID (PFOA) ELEVATED:

Elevated PFOA in urine is primarily from exposure and can be linked to potential health effects on the kidneys, hyperuricemia (high uric acid), cancer, endocrine, reproductive.

There is no medically approved treatment to remove PFOA from the body, but exposure can be reduced by avoiding certain foods and products, and some medical interventions may help lower levels.

Phthalates Comment

MONO-N-BUTYL PHTHALATE (mBP) ELEVATED:

mBP is a metabolite of dibutyl phthalate (DBP), used in nail polish, cosmetics, and certain medications.

Health implications: DBP is an anti-androgenic compound, potentially lowering testosterone and affecting reproductive organ development.

Symptoms: Reduced libido, fertility issues, testicular dysgenesis, fatigue, thyroid dysfunction.

Treatment considerations: Avoid DBP-containing products. Use glutathione, selenium, and zinc to support detoxification and hormone metabolism. Consider endocrine evaluation.

Environmental Toxins Comment

ENVIRONMENTAL POLLUTANTS PROFILE:

The reported markers in the Environmental Pollutants Profile commonly originate from industrial/manufacturing products or their associated byproducts. Exposures are often occupationally-related and typically through either inhalation or topical exposure.

Metabolism of these products occurs via the liver detoxification pathways leading to excretion into the urine. Chronic exposures may also lead to build up of these products in fatty tissue deposits.

3-METHYLHIPPURATE ELEVATED:

Xylenes are found in many solvents (paints, perfumes, petroleum products/emissions, insecticides/pesticides), with elevations often due to occupational exposures.

Xylene does not accumulate significantly in body tissues.

The 2-isomer exhibits a longer half-life, whilst the 3-isomer is the principal component making up 45-70% of co Trimethylbenzene Metabolite (3,4-Dimethylhippurate).

Effects:

Depression of the central nervous system.

Neuropsychological and neurophysiological dysfunction.

Anaemia, thrombocytopaenia, renal damage. Irritation of mucous membranes, dermatitis, nausea, fatigue, headache, anxiety, Dyspnea, cyanosis.

TRANS, TRANS-MUCONIC ACID ELEVATED:

Benzenes are components of crude/refined petroleum products (Automotive emissions/emissions, Byproduct from the production of xylene, toluene, styrene and other compounds, Discharge or seepage of industrial wastewater from chemical/petrochemical industries) and a Tobacco byproduct.

Benzene is metabolized by the liver and excreted/measured in the urine as tt-Muconic Acid.

Benzene and its metabolites can however accumulate in lipid depots.

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Sources of exposure: Inhalation of vapors

Interfering Factors: Sorbic acid and potassium sorbate (common food preservatives), are metabolized to muconic acid, which may therefore cause elevations of this marker.

Sources include processed cheese slices and spreads, salad dressings, mayonnaise, flavoured drinks, canned foods, and baked goods.

To eliminate this confounding variable, sorbic acid, is assayed and reported on the patient's Environmental Pollutants Profile, if detected.

Effects:

Lowers blood parameters	haematocrit, haemoglobin level, red cell, white cell, platelet counts, Bone marrow depression with aplastic anaemia, leukaemia, thrombocytopaenia
Human carcinogen	Genotoxic
Skin and eye irritations	
Central Nervous System	Depression.

Methodology

Liquid Chromatography-Mass Spectrometry (LC-MS/MS/MS), Automated Chemistry/Immunochemistry

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