

## BODY BIOCHEMICAL 8 TEST KIT (25 Vials)

Product Code 8139

Citric Acid Cycle is also known as the TCA cycle (tricarboxylic acid cycle) or the Krebs cycle.

It is a series of chemical reactions used by all aerobic organisms to release stored energy through the oxidation of acetyl-CoA derived from carbohydrates, fats, and proteins, into adenosine triphosphate (ATP) and carbon dioxide. In addition, the cycle provides precursors of certain amino acids, as well as the reducing agent NADH, that are used in numerous other reactions. Its central importance to many biochemical pathways suggests that it was one of the earliest established components of cellular metabolism and may have originated abiogenically. Even though it is branded as a 'cycle', it is not necessary for metabolites to follow only one specific route; at least three segments of the citric acid cycle have been recognised. (Wikipedia)

Code	Name	Description
BB 176	Aconitase	An essential enzyme in the citric acid cycle and iron regulatory protein 1 interacts with messenger RNA to control the levels of iron inside cells.
BB 177	Alkaline Phosphatase / ALP	Present in all tissues throughout the entire body, but is particularly concentrated in liver, bile duct, kidney, bone, and the placenta; high levels can occur if the bile ducts are obstructed, in Paget's Disease of bone and in untreated coeliac disease.
BB 178	Alpha-Ketoglutarate Dehydrogenase	Part of citric acid cycle; catalyses the conversion of $\alpha$ -ketoglutarate to succinyl-CoA and produces NADH directly providing electrons for the respiratory chain.
BB 179	Alpha-Ketoglutaric Acid (AKA)	A key intermediate in the citric acid cycle, coming after isocitrate and before succinyl CoA.
BB 180	Asparagine	An amino acid required for development and function of the brain; also plays an important role in the synthesis of ammonia.
BB 181	Cis-Aconitic Acid	An intermediate in the isomerisation of citrate to isocitrate in the citric acid cycle.
BB 182	Citrate Synthase	An enzyme active in all cells, where it is most often responsible for catalysing the first reaction of the citric acid cycle (the condensation of acetyl-CoA and oxaloacetate to form citrate).
BB 183	Creatinine	A waste product that comes from the normal wear and tear on muscles of the body.
BB 184	Dihydrotestosterone / DHT / Androstanolone / Stanolone	Involved in sexual differentiation of the male genitalia during embryogenesis, maturation of the penis and scrotum at puberty, growth of facial, body, and pubic hair, and development and maintenance of the prostate gland and seminal vesicles. It is produced from testosterone, a less potent hormone, by the enzyme $5\alpha$ -reductase in select tissues.
ClBB 185	Fumarase / Fumarate Hydratase	Participates in two metabolic pathways (citric acid cycle and reductive citric acid cycle); is also important in renal cell carcinoma.
BB 186	Human Chorionic Gonadotropin / hCG	A hormone produced by the placenta after implantation; its presence of hCG is detected in some pregnancy tests (HCG pregnancy strip tests); also produced by some cancer tumours.
BB 187	Isocitrate	Involved in citric acid cycle.
BB 188	Isocitrate Dehydrogenase	Involved in the citric acid cycle; responsible for catalysing the reversible conversion of isocitrate to alpha-ketoglutarate and CO <sub>2</sub> in a two-step reaction.
BB 189	Lipotropin	Hormone secreted by the anterior pituitary gland which promotes the release of fat reserves from the liver into the bloodstream.
BB 190	Malate Dehydrogenase	An enzyme in the citric acid cycle that catalyses the conversion of malate into oxaloacetate (using NAD <sup>+</sup> ) and vice versa.
BB 191	NADH / Nicotinamide Adenine Dinucleotide	Involved in citric acid cycle; a co-enzyme required for the production of energy in cells. Its effects include the stimulation of dopamine, noradrenaline, and serotonin receptors, by which mechanism it is thought to increase mental alertness and clarity and improve concentration.
BB 192	Nagalase / $\alpha$ -N-acetylgalactosaminidase	An extracellular matrix-degrading enzyme that is secreted by cancerous cells in the process of tumour invasion. It is also an intrinsic component of the envelope protein of various virions, such as HIV and the influenza virus. Thus, it is also secreted from virus-infected cells.
BB 193	Oxaloacetate / Oxalacetic Acid	A metabolic intermediate in many processes that occur in the body, including gluconeogenesis, urea cycle, glyoxylate cycle, amino acid synthesis, fatty acid synthesis and citric acid cycle.
BB 194	Phenylalanine Hydroxylase	An enzyme that catalyses the hydroxylation of the aromatic side-chain of phenylalanine

Code	Name	Description
		to generate tyrosine.
BB 195	Proglucagon	A precursor of glucagon, and several other components; generated in the alpha cells of the pancreas and in the intestinal L cells in the distal ileum and colon.
BB 196	Proinsulin	The prohormone precursor to insulin made in the beta cells of the islets of Langerhans, specialized regions of the pancreas: There are higher concentrations of proinsulin after meals and lower levels when a person is fasting. Increased levels of proinsulin in the circulatory system relative to mature insulin concentrations can indicate impending insulin resistance and the development of type 2 diabetes.
BB 197	Selenocysteine	Amino acid present in several enzymes (for example glutathione peroxidases, tetraiodothyronine 5' deiodinases, thioredoxin reductases, formate dehydrogenases, glycine reductases, and some hydrogenases).
BB 198	Succinate	Part of citric acid cycle; also used as a supplement for symptoms related to menopause such as hot flushes and irritability.
BB 199	Succinyl-Coenzyme A Synthetase /Succinyl-CoA synthetase / Succinate Thiokinase / Succinate-CoA Ligase	The only enzyme in the citric acid cycle that catalyses a reaction in which a nucleoside triphosphate (GTP or ATP) is formed by substrate-level phosphorylation. Defective SCS has been implemented as a cause of Fatal Infantile Lactic Acidosis.
BB 200	Tetrahydrobiopterin	Used in the degradation of phenylalanine and in the biosynthesis of some neurotransmitters (serotonin, melatonin, dopamine, norepinephrine, epinephrine); also a cofactor for the production of nitric oxide (NO) by the nitric oxide synthases.

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