Lactate

Description	Intermediate metabolite of glucose.
Indication	Suspected lactic acidosis, high anion gap metabolic acidosis, hypoxia
Additional Info	Lactate is formed by oxidation of pyruvate by lactate dehydrogenase as the end product of glycolysis under anaerobic conditions. Reversal of this regenerates pyruvate, which is removed by gluconeogenesis in the liver and kidney, or by complete oxidation to carbon dioxide and water. The production of lactate generates H^+ ions, whereas the utilization of lactate consumes H^+ ions. In health, lactate production and utilization are in balance and there is no net production of H^+ ions. Excess lactate production or reduced utilization can result in the development of an acidosis (lactic acidosis). Lactic acidosis is separated into Type A, caused by tissue hypoxia and Type B, caused by conditions not related to hypoxia (drugs, metabolic diseases, liver disease etc). Both L and D isomers of lactate exist. The L-isomer is the naturally occurring isomer in humans.
Concurrent Tests	N/A
Dietary Requirements	N/A
Interpretation	Raised lactate, but <5 mmol/L is not always associated with an acidosis due to buffering of the H+ ions. A plasma lactate >5 mmol/L is usually associated with an acidosis. Lactic acidosis may occur in short bowel syndrome due to increase production of the D-isomer by gut flora. The assay only measures the L-isomer, so the raised lactate will not be detected.
Collection Conditions	N/A
Frequency of testing	As required