Citrate

- **Citrate in seminal fluid**

General:

Citrate in seminal fluid is known as a marker for the secretion of the ejaculate. Citrate is formed in the prostate, influences the coagulation of the seminal fluid and reduces the toxic effect of lactic acid. The citrate concentrations remain constant 24 h at room temperature. Citrate can be detected in the seminal vesicle secretion only in low levels, in the prostate secretion however in a concentration of up to 25 mg/ml. Very high citrate levels, until 20 mg/ml, will be detected in the seminal plasma if the seminal vesicle secretion is reduced (as diluent effect). Low citrate values are found in prostatitis or malignancy. The correlation between citrate levels and activity of the acid phosphatase, also a parameter of the prostate function, is high.

Indication:	assessment of androgen-dependent exocrine prostate secretion, fertility disturbances.
Material:	1 ml ejaculate
Preanalytics:	frozen for dispatch
TAT:	7-10 days*
Method:	photometry
Units:	mg/dl
Ref.- range:	250 - 900

- **Citrate in urine**

General:

Approx. 90% of citrate is found in the skeleton. Citrate is absorbed in the intestine, the regulation of citrate is controlled by the intermediary metabolism of bone tissue and intestine as well as via its biotransformation in liver. The excretion of citrate in the urine is a function of filtration, reabsorption, peritubular transport, and synthesis by the renal tubular cell. The proximal tubule reabsorbs most (70-90%) of the filtered citrate, and citrate secretion is negligible. Acid-base status plays the most significant role in citrate excretion. Alkalosis enhances citrate excretion, while acidosis decreases it. In acidosis, increased citrate utilization by the mitochondria in the tricarboxylic acid cycle occurs.

Citrate plays several important roles in the mechanism of urinary stone formation and is a naturally occurring urinary stone inhibitor. It binds to calcium forming a highly soluble calcium-citrate complex, which reduces the ionic concentration of calcium and therefore the relative saturation of

calcium oxalate and calcium phosphate in urine.

Citrate excretion is impaired by acidosis, hypokalemia (causing intracellular acidosis), high–animal protein diet (with an elevated acid-ash content), and urinary tract infection (UTI). Women secrete significantly more citrate than men. The interpretation of citrate secretion in patients with kidney stones can be of clinical significance if gender-specific reference ranges and certain exclusion criteria are considered (GFR 80 ml/min, sterile urine and urine volume).

Indication:	nephrolithiasis
Material:	10 ml urine
Preanalytics:	Storage of more than 24 h requires frozen urine, room temperature causes decrease of citrate levels in urine.
TAT:	7-10 days*
Method:	RECH
Units:	mmol/24h
Ref.- range:	>1.70

- **Citrate in Blood**

Material:	1 ml serum
TAT:	7-10 days*
Method:	photometry
Units:	mg/L
Ref.- range:	13.0 - 36.0

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/