

# Blood Collection Tubes

## Blood Collection Tubes

The evacuated tube system for blood collection in use for various laboratory tests consists of tubes of various sizes, with color coded tops indicating tube contents.

Most blood collection tubes contain an additive that either accelerates clotting of the blood (clot activator) or prevents the blood from clotting (anticoagulant).

### Red

#### Additive & function:

None or contains silica particles which act as clot activators promotes blood clotting with glass or silica particles.

#### Laboratory Uses:

Serum testing (glucose, cholesterol, triglycerides, alkaline phosphatase, liver enzymes), amylase, potassium, BUN, HDL, CK, blood bank, serology (RH Typing, Antibody screening, Red Cell Phototyping, DAT, RPR, ANA, rheumatoid factor )

### Lavender

#### Additive & function:

EDTA (Ethylenediaminetetraacetic Acid) which act to remove calcium preventing clotting of blood.

#### Laboratory Uses:

Hematology testing (ESR, CBC w/diff, HgbA1c), blood film, reticulocytes, red cell folate, Monospot test for EBV parathyroid hormone (PTH)

### Light Blue

#### Additive & function:

Sodium Citrate which Binds and remove calcium to prevent blood from clotting

#### Laboratory Uses:

PT (Prothrombin Time) - evaluates the extrinsic system of the coagulation cascade & monitors coumadin therapy)  
APTT/ PTT (Activated Partial Thromboplastin Time) - evaluates the intrinsic system of the coagulation cascade & monitors heparin therapy)  
FDP (Fibrinogen Degradation Products)  
TT (Thrombin Time)  
Factor assays

### Yellow

#### Additive & function:

anticoagulant SPS (Sodium Polyanetholsulfonate) & ACD (acid citrate dextrose) which prevents the blood from clotting and stabilizes bacterial growth.

#### Laboratory Uses:

Tubes with SPS - For Blood and bodily fluid cultures (HLA, DNA, Paternity). Tubes with ACD are for cellular studies, HLA typing, paternity testing.

### Green

#### Additive & function:

Heparin (Sodium/Lithium/Ammonium) which Inhibits thrombin formation to prevent clotting

#### Laboratory Uses:

Chemistry Testing (Plasma determinations in chemistry) : ammonia, carboxyhemoglobin & STAT electrolytes, chromosome screening, insulin, renin and aldosterone.

### Grey

#### Additive & function:

Potassium oxalate and Sodium fluoride which acts as an antiglycolytic agent to ensure that no further glucose breakdown occurs within the sample after it is taken. Potassium oxalate removes calcium and acts as an anticoagulant.

#### Laboratory Uses:

Chemistry testing, especially glucose(sugar) and lactate, Glucose tolerance test (GTT)

### Black

#### Additive & function:

Sodium Citrate What forms calcium salts to remove calcium

#### Laboratory Uses:

Chemistry testing, especially glucose(sugar) and lactate, Glucose tolerance test (GTT)

