

Color Test for Specific Amino Acids


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Lead Acetate Test:

Used for detecting the presence of Sulfur group in:

- Cysteine
- Methionine

The Main Equation:

lead acetate + free sulfide ions  lead sulfide
(pbs)
a brown to
black color.

Libration of sulfide group:

Proteins or peptides or(a.a) + NaOH $\xrightarrow{\text{heat}}$
free sulfide group

The procedure:

H₂O

**1% egg
albumin**

0.02% cystine

0.02% methionine

2 ml

2 ml

2 ml

2 ml

5% NaOH

5 ml

5 ml

5 ml

5 ml

Lead Acetate

Few crystals

Few crystals

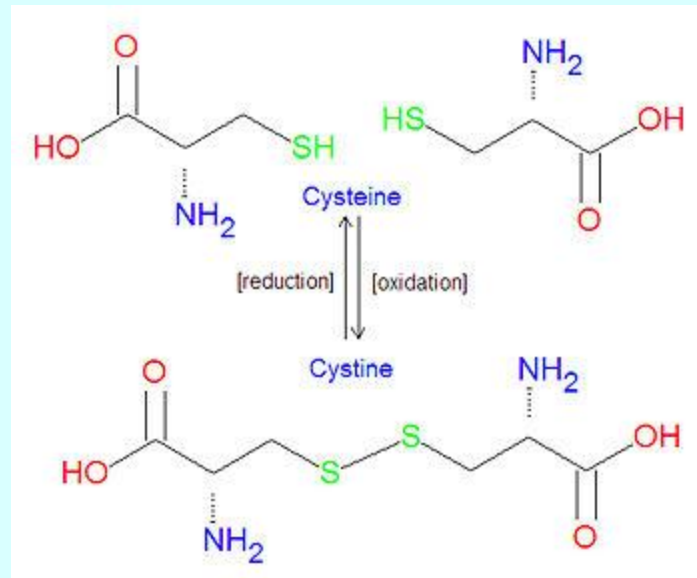
Few crystals

Few crystals

Incubate in boiling water bath for 10 minutes with occasional mixing.

Folin's Test:


This test is specific for free cysteine and cystine.



Libration of cysteine:

protein or peptide must be first hydrolyzed by sodium carbonate and sodium sulfite to librate cysteine

The Main Equation:

free cysteine + Folin's uric acid reagent
(phosphotungstic acid)  tungstenblue

The uses of the test:

This can be used for the
quantitative determination of
cysteine.

The procedure:

H2O	0.1% cystine	1% egg albumin	0.1% methionine
1 ml	1 ml	1 ml	1 ml
Sodium Carbonate (saturated)			
7 ml	7 ml	7 ml	7 ml
20% Sodium Sulfite			
3 ml	3 ml	3 ml	3 ml
Incubate at R.T for 5 min.			
Uric acid reagent			
1 ml	1 ml	1 ml	1 ml

