Aug 12, 2019

New Iron Extracting Method from Cattle's Blood for Iron Concentration Analysis V.2

Khairil Asnan[1], Mohd. Sadzan Asram bin Aliming[2], Aprialdy Idrus[2], Diana Eka Pratiwi[2]

[1]Biology Department, Universitas Negeri Makassar, [2]Chemistry Department, Universitas Negeri Makassar

1 Works for me dx.doi.org/10.17504/protocols.io.6f2hbqe

Khairil Asnan

ABSTRACT

Cattle's blood component is compressed using centrifuge (5000 rpm for 10 minutes), then supernatant (erythrocytes) collected. Erythrocytes with a ratio of 3:1 (serum:supernatant), treated with initial mixing with NaOH (0.5 M) with an initial ratio 1:1 (v/v) and let it sit for 30 seconds then mixed it by centrifugation about 10 rpm for 30 seconds. Sample then treated by mixing oleic acid (2:1 v/v). The sample then dehydrated by heat about 121^{O}C for a week. Calculated total iron mass was 240000 µg/100 ml whole blood sample (about 14.40% content of the whole sample). Sample purified by furnace using high temperature about 800^{O}C for 2 hours and increased the iron concentration up to 46.30% (m/m%).

MATERIALS

NAME	CATALOG #	VENDOR
Sodium Hydroxide	View	Sigma Aldrich

STEPS MATERIALS

NAME	CATALOG #	VENDOR
Sodium Hydroxide	View	Sigma Aldrich

MATERIALS TEXT

we also used oleic acid as chelating agent

Sample preparation

1

Compress the whole blood sample from cattle. **6 ml** **37 °C** **00:10:00**

Mini-centrifuge
Centrifuge
Fisher S67601B
Any standard mini centrifuge with adapters for different tube sizes will suffice

5000 rpm

2 Mix **2 ml** **blood sample** sample with **2 ml** **NaOH** **37 °C** **00:00:30**

0.5 Molarity (M)

Sodium Hydroxide
by Sigma Aldrich
View

dark green solution with strong odor

10 rpm **after we rest the mixed solution for 30 seconds**

3 Chelate reaction by adding **4 ml Oleic acid** into the previous mixed sample solution then let it sit for **00:00:30** . After that, mixed them by **10 rpm** for **00:00:30** .

Centrifuge
Benchtop Centrifuge
Eppendorf 5405000441
Any benchtop centrifuge will suffice