VERSION 1

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OPEN ACCESS

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protocols.io

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MANUSCRIPT CITATION:

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Protocol status: In development
We are still developing and optimizing this protocol

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untitled protocol V.1

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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 each with HCl (0.5 M) NaOH (0.5 M), and 30% H₂O₂ with an initial ratio of 1:1 (v/v). Each variable then treated by mixing SnCl₂ (1 M, 1:1 v/v), oleic acid (2:1 v/v), and O_{2(g)} (0.5 L/m, 60s). The best sample then purified by heat about 800°C for 120 minutes. The highest calculated total iron mass is 240000 µg/100 ml (NaOH + oleic acid). Sample purification has increased the iron concentration up to 46.30% (m/m%).

GUIDELINES

Beware to react the blood with peroxide because it will produces bubbles

PROTOCOL integer ID:
26840

Keywords: Physiology,
Biology, Bioanalysis

MATERIALS

MATERIALS

Sodium Hydroxide Merck MilliporeSigma (Sigma-Aldrich)

STEP MATERIALS

0.5 Molarity (M)

0.5 Molarity (M)

37 °C

00:30:00

Sodium Hydroxide Merck MilliporeSigma (Sigma-Aldrich)

10 rpm , Mix with sample for 20 seconds

Sample preparation

1

Compress the whole blood sample from cattle.

6 mL

37 °C

00:10:00

Equipment

Mini-centrifuge

NAME

Centrifuge

TYPE

Fisher

BRAND

S67601B

SKU

<https://www.fishersci.com/shop/products/fisherbrand-standard-mini-centrifuge-standard-mini-centrifuge/s67601b>

LINK

Any standard mini centrifuge with adapters for different tube sizes will suffice SPECIFICATIONS

5000 rpm

2

Mix

2 mL blood sample

sample with

2 mL NaOH

37 °C

00:00:30

0.5 Molarity (M)

Sodium Hydroxide Merck MilliporeSigma (Sigma-Aldrich)

Expected result

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 .

Expected result

Equipment

Centrifuge

NAME

Benchtop Centrifuge

TYPE

Eppendorf

BRAND

5405000441

SKU

<https://online-shop.eppendorf.us/US-en/Centrifugation-44533/Centrifuges-44534/Centrifuge-5425-PF-243560.html>

LINK

Any benchtop centrifuge will suffice

SPECIFICATIONS