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Protein detection on medical products

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Visibility?
Test Kits

- BCA Protein Assay Kit (Pierce)
- Protect-M (Biotrace)
- Test-Kit for Protein Detection (Miele)
- HemoCheck-S (Pereg)
BCA Protein Assay Kit

- Reagent A
- Reagent B
- Albumin standard ampules
BCA Protein Assay Kit

- Working reagent (reagent A : B = 50 : 1)
- 2 ml WR + 0.1 ml sample
- 2 ml WR + 0.1 ml protein standard
- 37 °C --> 30 min
- Photometer - 562 nm
Modified BCA-Method

• Working reagent (reagent A : B = 50 : 1)
• 1 ml WR + 0,1 ml sample (swab)
• 1 ml WR + 0,1 ml protein standard
• Incubation at room temperature
• Comparison of colour (30 min or 60 min)
Protect-M

• Test tube
  (with reagents, colour label and swab)
Moisten

Wipe

Mix

Incubate

Colour comparison
Test-Kit for Protein Detection (Miele)

- Reagents A - C
- Rinse solution
- 1 ml pipette
- Colour label
- Cuvette
Test-Kit plus Reflectometer
HemoCheck-S

- Test tubes
  + Activator
  + Indicator
- Swab
Directions for use

HemoCheck-S for the detection of blood on surfaces

HemoCheck-S

indicator  activator

A  B

swab

C
Conducted Tests

• 1: Standardising - modified BCA-Method
• 2: Comparison test with sheep blood (BCA)
• 3: Comparison Protect-M - BCA
• 4: Test-Kit with Reflectometer (Miele)
• 5: HemoCheck-S
Test description - BCA

- BSA-Standards (1 - 200 µg)
- Dilution series - defibrinated sheep blood
- Drying - metal plate (TOSI)
- Wipe - sterile swab
- Direct approach: 0,1 ml with pipette
BSA-Standard Series (1 - 160 µg)
Test 1 + 2

Protein Content - BSA (µg/ml) vs Blood (µl)

- 15 min
- 30 min
- 60 min
- direct

Blood (µl)
Comparison: Protect-M - BCA
Test description - Miele

- BSA-Standards (5 - 100 µg)
- Blind test with rinse solution (SDS)
- Direct approach (with pipette):
  0.1 ml Protein standard + 0.9 ml SDS
Miele Test Kit / RQflex plus

value of protein standard (µg/ml) vs. measured value (µg/ml)
relation: time - measured value

measured value (µg/ml)

minutes

- 50 µg/ml
- 20 µg/ml
HemoCheck-S

Restprotein (BSA)  Schafblut

100 µg, 10 µg, 1 µg, 0,1 µg, 0 µg
Results

• HemoCheck-S detects blood (~ 0,1 µg)

• BCA, Protect-M, Miele: protein detection
  Detection limits: \( \leq 5 \, \mu g \) / 10 - 70 \( \mu g \)

• Miele: quickest protein detection

• Protect-M: easiest handling

• BCA (modified): most flexible method
Thank you for your attention