VINCENT
LEERMIDDELEN
Scientific

MICROBIOLOGY

MINIMISE THE SPREAD OF BACTERIA AND VIRUSES BY WASHING AND DRYING HANDS PROPERLY.

VINCENT
LEERMIDDELEN
Scientific

THE COVID-19 VIRUS HAS SHOWN THE IMPORTANCE OF PROPER HAND WASHING TO PREVENT THE SPREAD OF DISEASE!

Bacteria and viruses are everywhere. Good and bad bacteria. Pass on bacteria and viruses as little as possible; wash and dry your hands thoroughly. Drying your hands well is important: Wet hands can spread thousands of times more bacteria than dry hands. Wet hands can spread bacteria up to 1,000 times more than dry hands. Humid hands attract bacteria and these are spread very quickly to others through direct contact and through contact on surfaces. Preferably use a paper towel and throw it away afterwards.

Test with fluorescent cream

Objective
Test how efficient you are in washing your hands.

Equipment
F086100 Fluorescent cream
F287110 Uv-lamp on batteries

Short guide
- Coat your hands thoroughly in fluorescent cream.
- Wash your hands as usual
- Check with the UV lamp if all of the cream has been washed away
- If necessary, carry out a bacterial test before and after washing hands (see next page)

Results
If your hands have not been washed properly, the UV lamp causes blue fluorescent spots to appear where the soap has not been properly applied.

Uv-lamp on batteries
Wavelength: 365 nm.
Works with 4x AA-batteries, not included
Article n° F287110

Fluorescent cream
Tube of 240 ml.
Article n° F086100

The bacteria test

Objective

Use the bacteria test to test the effectiveness of thorough hand washing. There are three different ways to test the effectiveness of hand washing:

Test 1: Prefabricated PCA agar plates - direct print

Equipment

116552 PCA-agar in petri dishes, 10 pc

Short guide

- Before washing your hands, carefully make a handprint (as many fingers as possible) on the PCA plate
- Wash your hands as usual
- Make another handprint on a new PCA plate
- Incubate the plates upside down for 2 days at room temperature or in an incubator at 37°C
- Compare the bacterial growth on the plates
- Repeat the test. This time wash your hands very thoroughly and disinfect if necessary.

Results

Compare the PCA plates after 2 days and compare the situation before and after washing and during thorough hand washing. What can you deduce from the test?

Result handprint before washing

Petri dish PCA
Diameter 90 mm (10 pc)
Article n° 116552
Diameter 55 mm (20 pc)
Article n° 119900

Remember to take the plates out of the fridge 30 minutes before use!

If there are still many bacteria after thorough hand washing with soap, it may be interesting to test the hand soap.

Carry out an even spread test on the PCA slide. Hopefully, a fresh and clean liquid hand soap has been used, but for solid hand soap, the soap may need to be diluted before it can be spread on a PCA plate.

Compare liquid and solid soap if necessary.

Test 2: Wiping method - sterile cotton swab and agar plate

Equipment

F048550 Cotton swab, sterile
116552 PCA agar in petri dish, 10 pc

Short guide

- Thoroughly wipe a sterile cotton swab over the entire surface of the hands and fingers
- Run the swab in a zigzag pattern along the surface of the PCA plate (press lightly)
- Wash your hands
- Repeat step 1 with a new sterile swab and PCA plate
- Incubate the plates upside down for 2 days at room temperature or in an incubator at 37°C for 2 days.
- The PCA plate may be divided into two sections (before and after hand washing)

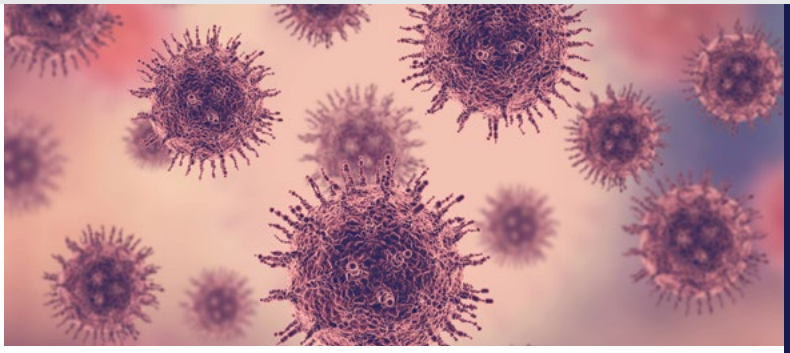
Results

Look at the PCA plates after 2-3 days and compare the situation before and after washing. If necessary, extend the test by disinfecting the hands after washing.
If necessary, extend the test by disinfecting the hands after washing. What can you deduce from the test?

Cotton swab, sterile
Article n° F048550

Petri dish PCA
Article n° 116552 (90 mm, 10 st)
Article n° 119900 (55 mm, 20 st)

Result cotton swab test before washing



The test can be extended to include checking the bacteria content on, for example, handles or taps on the toilet or the outside of the soap dispenser, etc. There are all kinds of places where there is a risk of contamination.

Test 3: Contact plates - quick and easy

Equipment

F782525 Hygicult TPC (Total Plate Count-agar)

Short guide

- Before washing hands, make a fingerprint (as many fingers as possible) on both sides of the agar plate.
- Wash your hands as usual
- Make an identical fingerprint on a new agar plate
- Incubate the plates upside down for 3 days at room temperature or in an incubator at 37°C
- Compare the bacterial growth on the plates
- Repeat the test. This time wash your hands very thoroughly and disinfect if necessary.

Results

Compare the contact plates before and after according to the manual.

Hygicult TPC
Article n° F782525

Result print before washing

The following options exist as an alternative to the prefabricated PCA plates:

Growth medium on roll (F800728)
Cut off the slices and place in a new Petri dish (F016590)

Ready-made growth medium in bottle (F800738)
Warm up and pour into petri dish (F016610)

Growth medium in powder form (F800718)
Heat up with demineralised water, boil for 10 minutes and pour into a petri dish

Meat peptone agar, powder 250 ml
Article n° F800718

Meat peptone agar, roll (bacteria)
Article n° F800728

Meat peptone agar in bottle (bacteria)
Article n° F800738

Make your own agar growth medium (C800500-0400) and food substrate pepton (C877500-0080), NaCl, meat extract

Make the nutrient medium:

Weigh the required amount of dry matter. Add the amount of dry matter to the amount of liquid. Do not add the liquid to the dry matter! Let it soak well and see on the jar how long and at what temperature it has to be sterilised. Sometimes even boiling alone is sufficient. Sterilisation can take 20 minutes at 120°C. Attention: If extra sterile selective supplements have to be added to the nutrient base, then add them after sterilisation. These supplements often cannot withstand sterilisation.

If you make your own PCA plates and do not have a special room to work in (flow cabinet), you can choose to make the PCA plates on a disinfected countertop/table. Let the liquid cool down a little after sterilisation and pour the Petri dishes. Close the Petri dishes immediately and allow to cool further until the medium has completely solidified. Then they are ready for use.

Petri dish plastic, Ø150 x 20 mm, sterile
Article n° F016620

Pca-agar in bottle, 250 ml
Article n° C800940-0250

Petri dish plastic, Ø60 x 15 mm, sterile
Article n° F016590

Petri dish plastic, Ø90 x 16 mm
Article n° F016610

Agar powder, normal quality
Article n° C800500-0400

Spread of contamination test

Objective
Testing how contagious diseases can be spread by hand contact, among other things.

Materialen
F778166 Edvotek kit 166 - Spread of infectious diseases
F287110 UV lamp
Latex or nitril gloves (diverse uitvoeringen verkrijgbaar)

Short guide
- Carry out this test while wearing gloves. Each pupil puts a glove on his/her right hand.
- One pupil becomes "infected"
- The "infected" student then shakes hands with a classmate. The infection is spread by shaking hands among the other pupils.
- After the spread, the scope is examined using the UV lamp.

Results
The Edvotek kit 166 mimics the spread of infections with the help of a dye that is visible under UV light.

Uv-lamp on batteries
Wavelength: 365 nm. Works on 4 x AA batteries (not included)
Article n° F287110

Spreading of infectious diseases
Article n° F778166

Electrophoresis
Also available: equipment for practical tests in electrophoresis.

Article n° F778166

Vincent Leermiddelen Scientific · Boomsesteenweg 826 · 2610 Wilrijk (Antwerpen) · Tel +32 (0)3 239 49 62 · info@leermiddelen.be · www.leermiddelen.be