

Quality control



Good picture



Good picture



Blurred picture.
Impossible to read
the labels.



The Petri dish is not enti-
rely visible in the picture
(out of frame).



The background is not
completely black.



Picture taken from aside.
Perspective distortion.



Light reflection on the AST



Operator's reflection on
the AST



LA FONDATION



LA FONDATION

Image acquisition

protocol for AST

analysis



ASSISTANCE
PUBLIQUE HÔPITAUX
DE PARIS



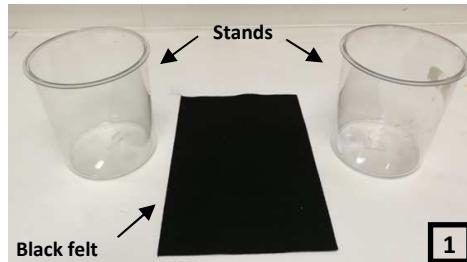
This protocol guides you to take standardised AST (Antimicrobial Susceptibility Testing) images, which have the appropriate quality for further analysis.

Materials

- A smartphone (or tablet) with camera (resolution \geq 12 megapixels)
- A rectangular piece of matt black felt, which has the size of an A4 (21x30 cm) or larger.
- A rigid sheet of matt black cardboard, which has the size of an A3 (42 x 60 cm) or larger.
- 2 objects that can be used as stands for the cardboard (see fig. 1). Their height should be around 16 cm.

Setup

- Choose a bright environment to install the image acquisition setup. Light should be uniform and diffuse. The light sources (windows, lamps) should not be too close to the AST. It is not advisable to use a table lamp.
- Put the piece of black felt (A4) on a flat surface (for example a lab bench) and put the two stands, one on each side of the felt.



1

- Make a small hole in the very center of the black cardboard (A3) which is large enough for your smartphone's camera.

Put the cardboard on top of the two stands (fig. 2).



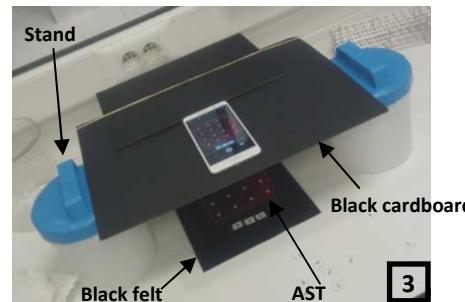
2

- On your smartphone, open the camera application and do the following setup : (1) Desactivate the flash light. (2) Set the countdown timer to 5 seconds. (3) Select the program to AUTO. (4) Select the largest size (maximum megapixels) and the highest quality (100%).

- Put your mobile on the cardboard (screen upside) and center the camera in the hole. Your pictures will be taken through the hole (fig. 3).

- Take an AST and remove the plastic top cover. Put the AST on the black felt. Make sure that the picture background is all black and that the AST is entirely in the picture. The AST should be as large as possible in the picture, with just a small black border around.

- If not you need to adjust the picture by changing the distance between the camera and the AST. In order to do this, you can change your cardboard stands or put something (like a book) under the felt.



3

Ready to take the picture

Look at the image on on your smartphone and compare it with the examples in figures 4 and 5.

Check that:

- The AST is not out of frame.
- The antibiotic labels are in focus (not blurred).
- There are no shadows or light reflexions on the AST.

Take the picture

- Take the picture and check the quality. Zoom in on the labels to make sure that they are not blurred.

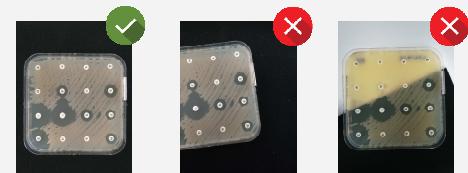
- By following this protocol you should be able to take pictures of the same quality than in figure 4.



4

After taking a picture, make sure that all the following conditions are satisfied:

- The AST is entirely in the picture and does not touch the image borders.



- If the AST is square, its sides should be parallel to the image borders.



- There is no strong perspective distortion.



5