



# BACTERIOLOGY

DIY (DO-IT-YOURSELF)



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THE LAB BOOK YOU ARE HOLDING IS A SET OF INSTRUCTIONS THAT WILL GUIDE YOU THROUGH THE ASSEMBLING OF THE DIY SOLAR CHARGER, WHICH WAS DEVELOPED IN THE COURSE OF THE FRIDAY ACADEMY - OUR MODEL OF INQUIRY-BASED WORKSHOPS AT THE Rampa Lab WHICH ARE BASED ON NON-FORMAL AND PEER TO PEER LEARNING METHODS, OFFERING TRANSFER OF KNOWLEDGE ABOUT THE MOST RELEVANT AND MODERN TECHNOLOGICAL TOOLS.

BACTERIOLOGY, THERE ARE 5 MILLION TRILLION TRILLION BACTERIA ON THE PLANET EARTH AND »ONLY« 7,7 BILLION HUMANS. IF HUMAN BEINGS LIVE ON ALMOST EVERY PART OF THE WORLD, BACTERIA LIVE LITERALLY EVERYWHERE. IN SOIL, IN WATER AND IN THE AIR. SOME OF THEM DON'T EVEN REQUIRE OXYGEN TO SURVIVE. BACTERIOLOGY REPRESENTS THE FIRST STEP TOWARD LEARNING ABOUT THE MICROBIAL WORLD OF BACTERIA. WITH THIS KIT, WE CAN GROW OUR OWN BACTERIA FROM AIR, SKIN OR ANY OTHER ITEM. BUT LOOK CAREFULLY, THERE MIGHT BE SOME OTHER INHABITANTS OF THE MICROBIAL WORLD PRESENT.

# WHAT DO WE NEED?

## MATERIALS:

- 1) DISTILLED WATER - 60 ML (A BIT MORE DUE TO COOKING)
- 2) POWDERED MILK - 0,3G
- 3) YEAST EXTRACT - 0,18G
- 4) NaCl - 0,22G
- 5) AGAR - 0,9G
- 6) BLEACH

## TOOLS:

- 1) PETRI DISH
- 2) MICROCENTRIFUGE TUBE
- 3) WOODEN STICK
- 4) GLOVES

# STEP-BY-STEP:

1. MIX DISTILLED WATER, POWDERED MILK, YEAS EXTRACT, NaCl, AND AGAR.  
PUT THE MIXTURE ON THE STOVE AND COOK UNCOVERED FOR 20 MINUTES.



2. LEAVE THE MIXTURE UNCOVERED AND WAIT FOR IT TO COOL TO 50 °C (c. 15 MINUTES).
3. PUT ON STERILE GLOVES.

4. SLIGHTLY LIFT THE COVERS OF THE PETRI DISHES. DO NOT REMOVE THE COVERS!  
CAREFULLY AND EVENLY POUR THE PREPARED NUTRIENT INTO THE PETRI DISHES.

5. PUT THE PETRI DISHES INTO THE REFRIGERATOR AND LET IT COOL FOR ABOUT AN HOUR.

6. TAKE THE FIRST PETRI DISH OUT OF THE REFRIGERATOR, OPEN IT CAREFULLY, AND LEAVE A FINGERPRINT IN THE GEL (IT WILL NOT BE VISIBLE). QUICKLY CLOSE THE PETRI



DISH.

NOTES:

7. TAKE THE OTHER PETRI DISH, OPEN IT CAREFULLY, AND TOUCH THE GEL WITH THE SURFACE OF A COIN. QUICKLY CLOSE THE PETRI DISH.

8. TURN BOTH PETRI DISHES UPSIDE DOWN AND SET THEM ASIDE SOMEWHERE AT ROOM TEMPERATURE (KITCHEN COUNTER, DRAWER, ETC.)

9. THE NEXT DAY CHECK WHAT IS HAPPENING AND WHETHER ANYTHING HAS GROWN. DO NOT OPEN THE PETRI DISHES!

10. IN FOUR DAYS THE BACTERIA WILL COVER THE SURFACE YOU TOUCHED WITH YOUR FINGER OR A COIN. BACTERIA GROW SLOWER WHEN IT'S COLD AND FASTER WHEN IT'S WARM.

11. WHEN THE EXPERIMENT IS OVER PUT ON THE GLOVES.

12. ADD AN EVEN AMOUNT OF BLEACH INTO EACH PETRI DISH AND WAIT FOR 30 MINUTES.

13. POUR THE LIQUID INTO THE SINK AND RINSE WITH COLD WATER.

14. REMOVE THE GEL FROM EACH PETRI DISH WITH A WOODEN STICK AND THROW THE PETRI DISHES INTO THE RECYCLING BIN FOR PLASTIC CONTAINERS.



15. FOR MORE IDEAS CHECK HERE (OR CODE).

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THE LAB BOOK WAS DESIGNED IN THE COURSE OF THE EUROPEAN COMMISSION PROJECT DITOS (DOING IT TOGETHER SCIENCE) WITH THE PURPOSE TO INFORM THE GENERAL PUBLIC ABOUT MODERN SCIENCE IN EUROPE. THE PROJECT'S AIM IS TO DEEPEN THE INVOLVEMENT OF THE GENERAL PUBLIC IN CO-CREATING THE SCIENTIFIC DEVELOPMEN

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 Kersnikova

 GALERIJA  
KAPELICA

RAMPX Lab

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