

Real-Life Research: Hunting for Bacteria in Sheep Lungs

Scientists ask questions and answer them using the scientific method just as you have. Read about Laura's research then look at the questions.

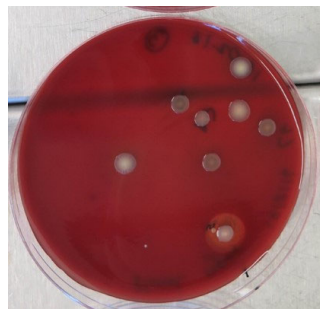
Aim There are trillions of **bacteria** in the human gut, that help us to digest our food and stay healthy. But, did you know that there are also bacteria in your lungs? Laura wants to know what types of bacteria there are and where in the lung they live.

Materials

- ⇒ 6 healthy sheep
- ⇒ Agar plates
- ⇒ Disposable brushes for swabbing

Method Laura took six adult sheep and gave them an **aesthetic** (medicine) to put them to sleep for an hour. When they were asleep the brush was inserted into different parts of their lungs, through their mouth. The brush was then **swabbed** over **agar plates** and the plates were left for a few days.

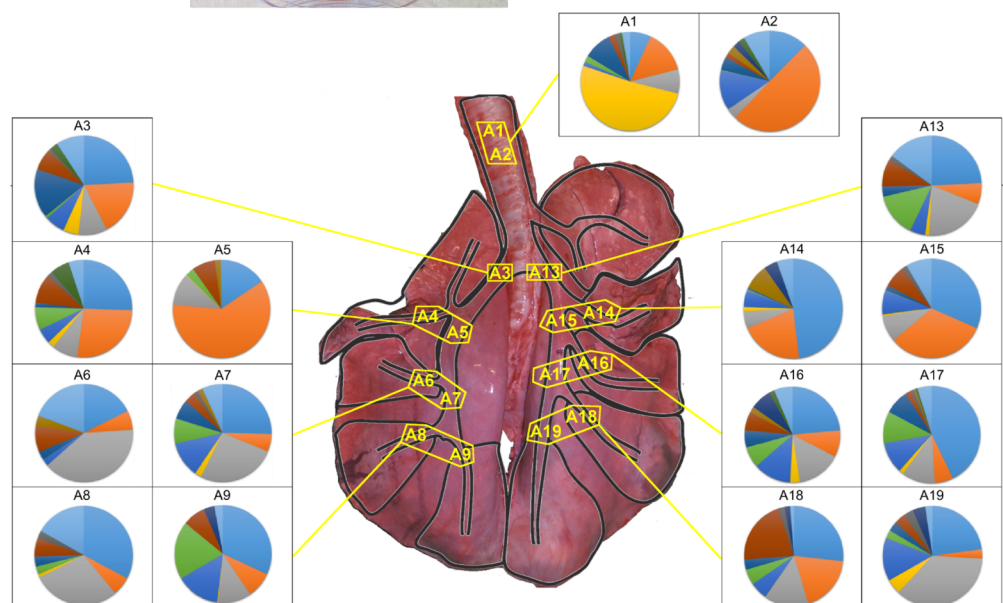
Results Different types of bacteria grew on the agar plates. Laura identified the different bacteria and counted how many of each type were growing.



Lung bacteria growing on an agar plate

Types of Bacteria

- Bacteroidales
- Bacillales
- Neisseriales
- others
- Pseudomonadales
- Bacteroidales
- Caulobacteriales
- Actinomycetales
- Lactobacillales
- Rhodobacterales
- Pasteurellales
- Burkholderiales
- Fusobacteriales



Laura Glendinning is a researcher working at The Roslin Institute, she now studies bacteria in chicken guts.

Think & Discuss

- 1) What did Laura use to collect the bacteria? What else could she use?
- 2) Why were the sheep put in a deep sleep using an anaesthetic?
- 3) Why did Laura study more than one sheep ?
- 4) Why did Laura only look at healthy sheep?
- 5) Look at the results section. Answer true or false to the following statements and correct the false ones:
 - A) Laura did not find any bacteria in the sheep lungs.
 - B) Laura looked for bacteria in 19 different places in the sheep lungs.
 - C) Laura used bar charts to show her results.
 - D) These sheep must all be sick as they have bacteria in their lungs.
- 6) Laura's conclusion is: *There are lots of different types of bacteria in different places in sheep lungs.* Do you agree with her conclusion? Why/why not?