

4 In mammals, the gas exchange system includes a set of branching airways that carry air to and from the gas exchange surface.

Air from the external atmosphere passes through different types of airway to reach the gas exchange surface.

(a) Name the type of airway of the gas exchange system that branches into airways known as bronchioles.

..... [1]

(b) Fig. 4.1 is a photomicrograph of a section through a bronchiole.

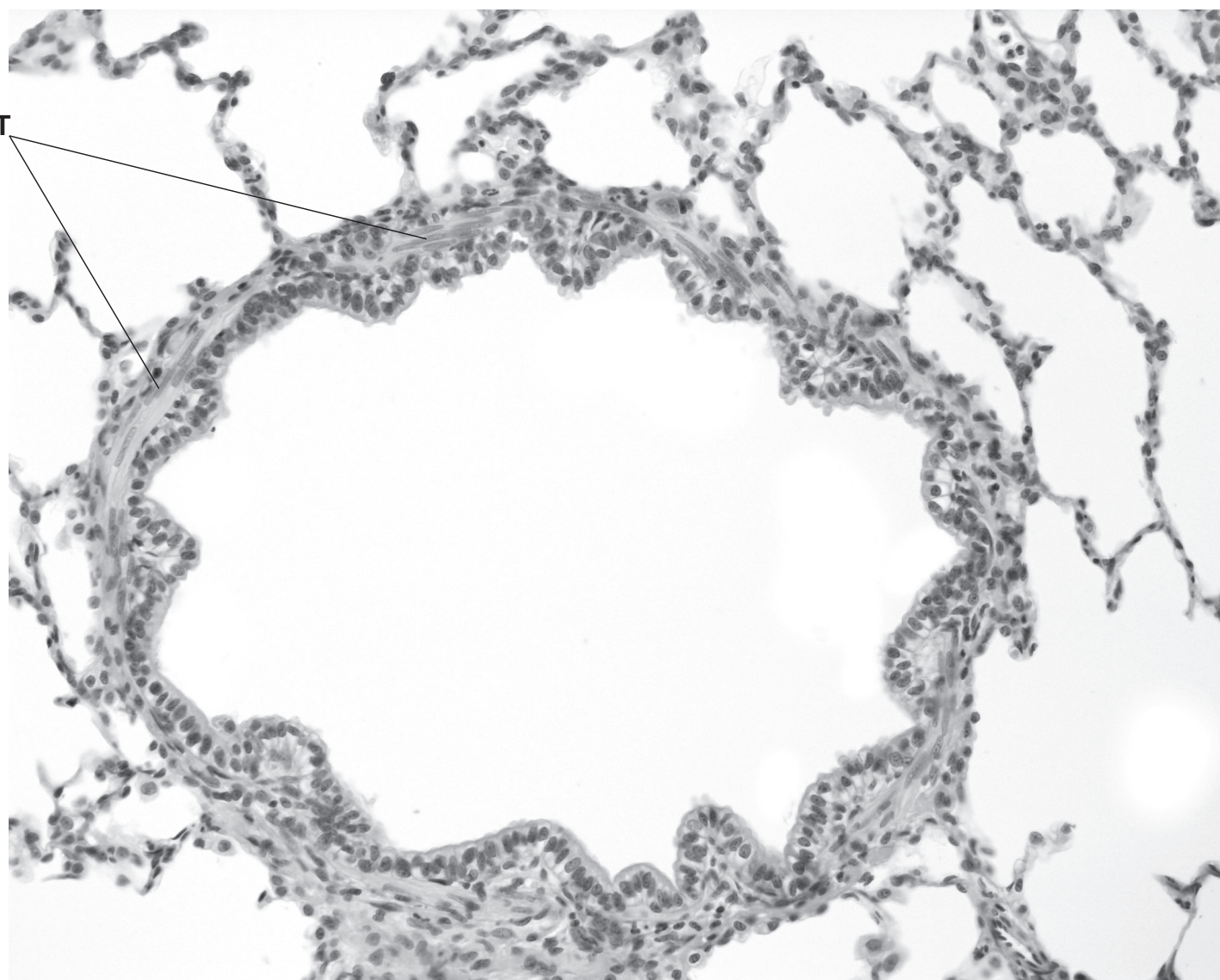


Fig. 4.1

(i) The bronchiole shown in Fig. 4.1 is **not** part of the gas exchange surface.

Name **one** structure in the gas exchange system, **visible in Fig. 4.1**, where gas exchange is carried out.

..... [1]

(ii) Name the type of cell found in the tissue labelled **T** in Fig. 4.1.

..... [1]

(iii) State the features that help to identify the type of airway shown in Fig. 4.1 as a bronchiole and **not** the other types of airway present in the gas exchange system.

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..... [3]

(c) Blood is pumped to the lungs in the pulmonary circulation.

The lungs also receive a supply of blood from the systemic circulation.

Explain why the pulmonary circulation **and** the systemic circulation need to supply blood to the lungs.

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..... [2]