

2 Cholera is an infectious intestinal disease caused by a bacterial pathogen.

(a) Name the species of bacterium that causes cholera.

..... [1]

(b) The World Health Organization (WHO) recommends a number of different approaches for the prevention and control of cholera. Two of these are:

- Authorities should provide access to safe drinking water.
- Individuals and communities should practise preventive personal hygiene.

Suggest **and** explain how these two approaches help in the prevention and control of cholera.

.....

 [4]

(c) Mass vaccination using an oral cholera vaccine (OCV) can be carried out in situations where there is a high risk of people developing the disease.

Passive immunisation involves transferring antibodies into a person for the prevention or treatment of an infectious disease. Some of the infectious diseases for which passive immunisation is available use monoclonal antibody. Passive immunisation for cholera using monoclonal antibody could be available in the future.

(i) Complete Table 2.1 to compare an OCV and passive immunisation for cholera:

- fill in the empty box in **row 1**
- circle the correct answers from the choices given in **rows 3, 4 and 5**.

Table 2.1

row	feature	oral cholera vaccine	passive immunisation for cholera
1	component causing the desired response		antibody
2	type of immunity gained	artificial active	artificial passive
3	stimulates production of memory lymphocytes	yes / no	yes / no
4	length of time needed to have an effect	shorter same longer	longer same shorter
5	duration of immunity	shorter same longer	longer same shorter

[4]

(ii) The production of monoclonal antibodies for treatment involves the formation of hybridoma cells from two different cell types.

Name the **two** types of cell that fuse to form a hybridoma cell **and** explain why this fusion is necessary.

.....

 [3]