Headspace (a)

Gaz exchange

Tank

Respiration
(µmol.dm$^{-3}$.h$^{-1}$)

(b)

[O2] (µM)

250
200
150
100
50
0
-50
0.00E+00   5.00E-01   1.00E+00   1.50E+00   2.00E+00   2.50E+00   3.00E+00
time (h)

(c)

O$_2$ flux (µM.h$^{-1}$)

50.0
40.0
30.0
20.0
10.0
0.0
0.00E+00   5.00E-01   1.00E+00   1.50E+00   2.00E+00   2.50E+00   3.00E+00
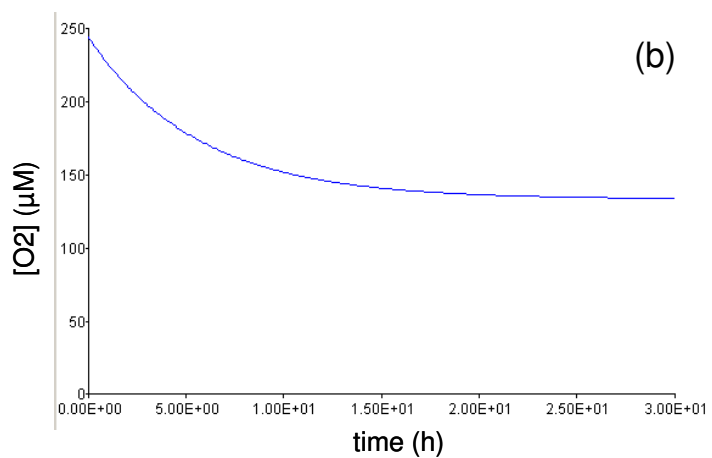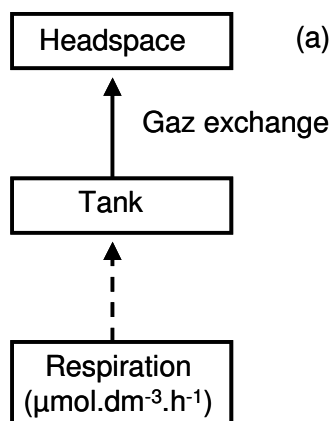time (h)

Gaz_Exchange

Figure 1: experimental setup used to estimate the flux of oxygen diffusion from headspace to culture medium (a), dynamic of O$_2$ concentration (b) and dynamic of O$_2$ flux between headspace and medium (c) by considering the average O$_2$ consumption rate from oxygraph measurements in the experiment P (250 µM.h$^{-1}$, see text) and the equation of gas transfer.

Headspace (a)

Gaz exchange

Tank

Respiration
(µmol.dm$^{-3}$.h$^{-1}$)

(b)

[O2] (µM)

250
200
150
100
50
0
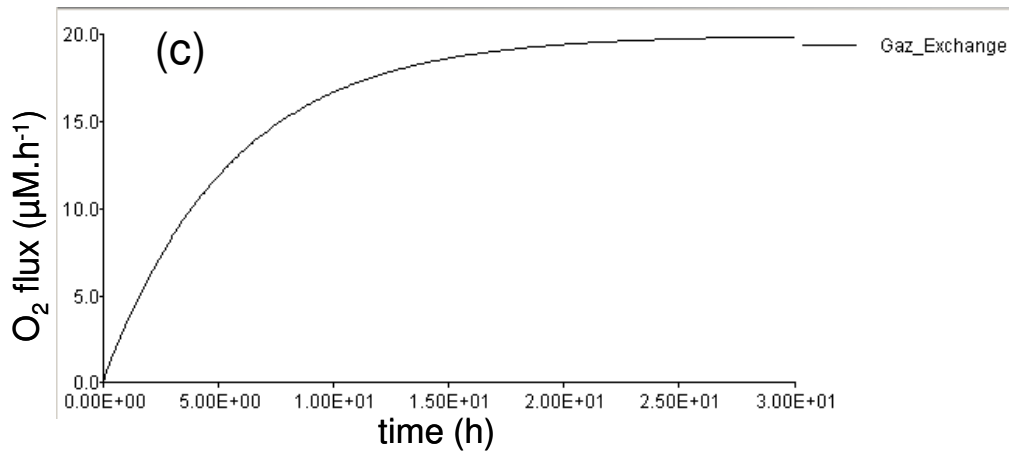0.00E+00   5.00E+00   1.00E+01   1.50E+01   2.00E+01   2.50E+01   3.00E+01
time (h)

Figure 2: experimental setup used to estimate the flux of oxygen diffusion from headspace to culture medium (a), dynamic of $O_2$ concentration (b) and dynamic of $O_2$ flux between headspace and medium (c) by considering the $O_2$ consumption rate from the mass balance equation for the experiment P (18 $\mu M.h^{-1}$, see text) and the equation of gas transfer.
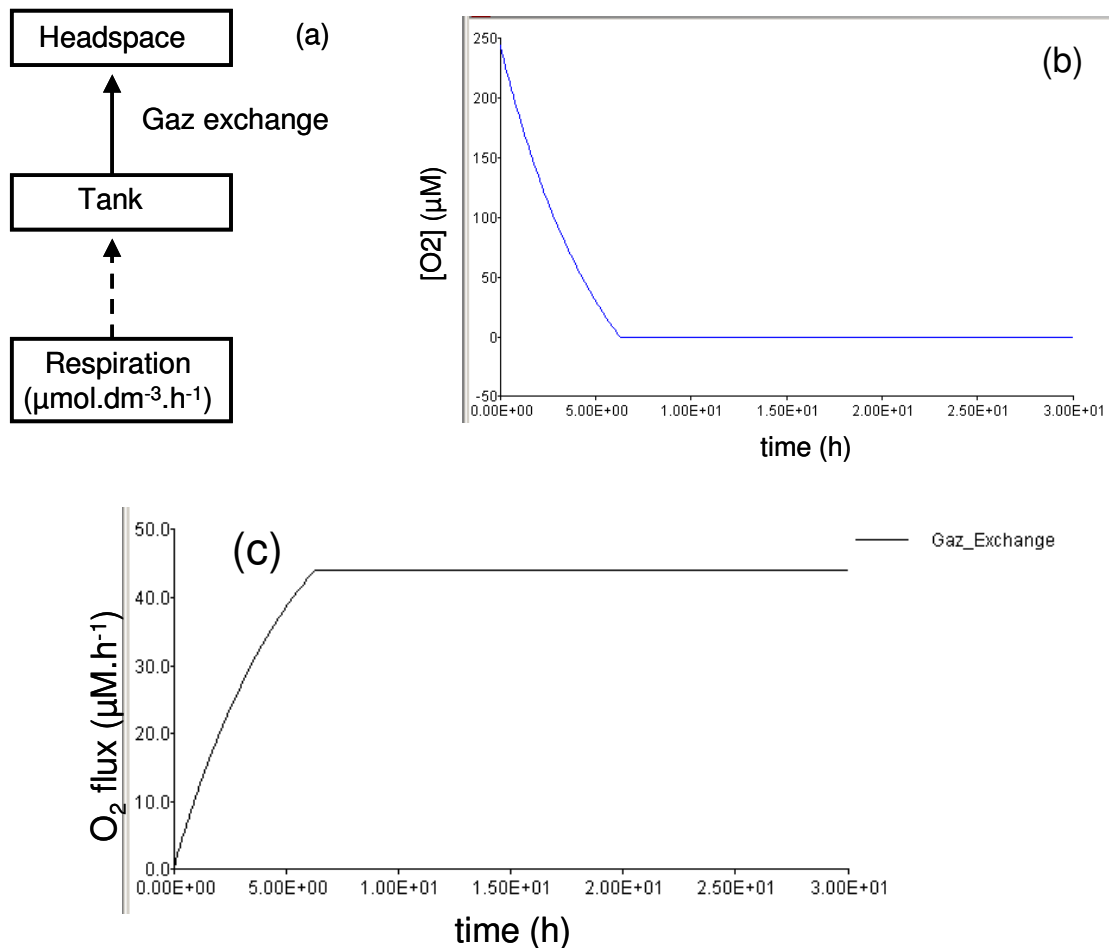


Figure 3: experimental setup used to estimate the flux of oxygen diffusion from headspace to culture medium (a), dynamic of $O_2$ concentration (b) and dynamic of $O_2$ flux between headspace and medium (c) by considering the $O_2$ consumption rate from the mass balance equation for the experiment B (65 $\mu M.h^{-1}$, see text) and the equation of gas transfer.