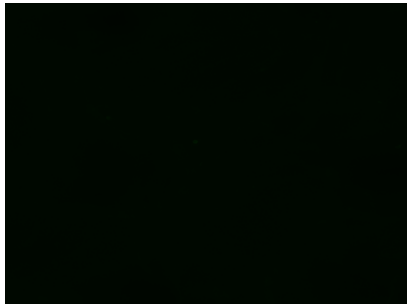
Coton trempé 10 min dans tu TEP concentré à 0.05% pendant 10min avec 10µL de PHK67, et rincé pendant 20s

Conditions expérimentales:

- Objectif x10
- Fluorescence en vert
- Temps d'exposition 10 – 800ms
- Gain 1
- Echantillon : coton imbibé de TEP 0.05% rincé 20s
- Ajout de DI water sur la lamelle
- Date de préparation et d'observation : 22 mai 2019

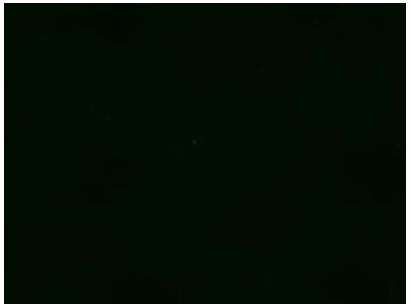
Images brutes

10ms

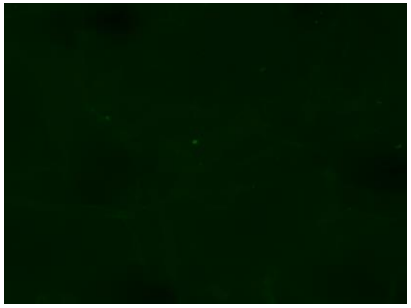


20ms

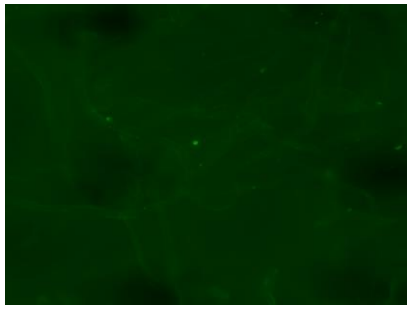
50ms



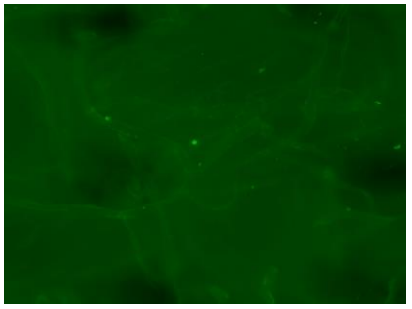
100ms



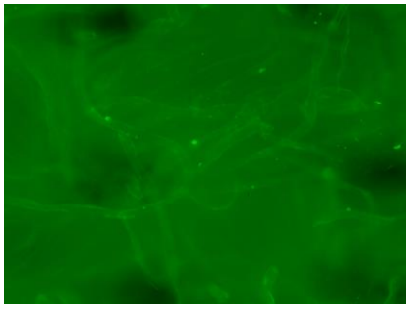
200ms



300ms



500ms



800ms

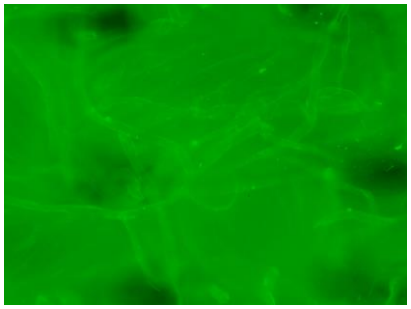
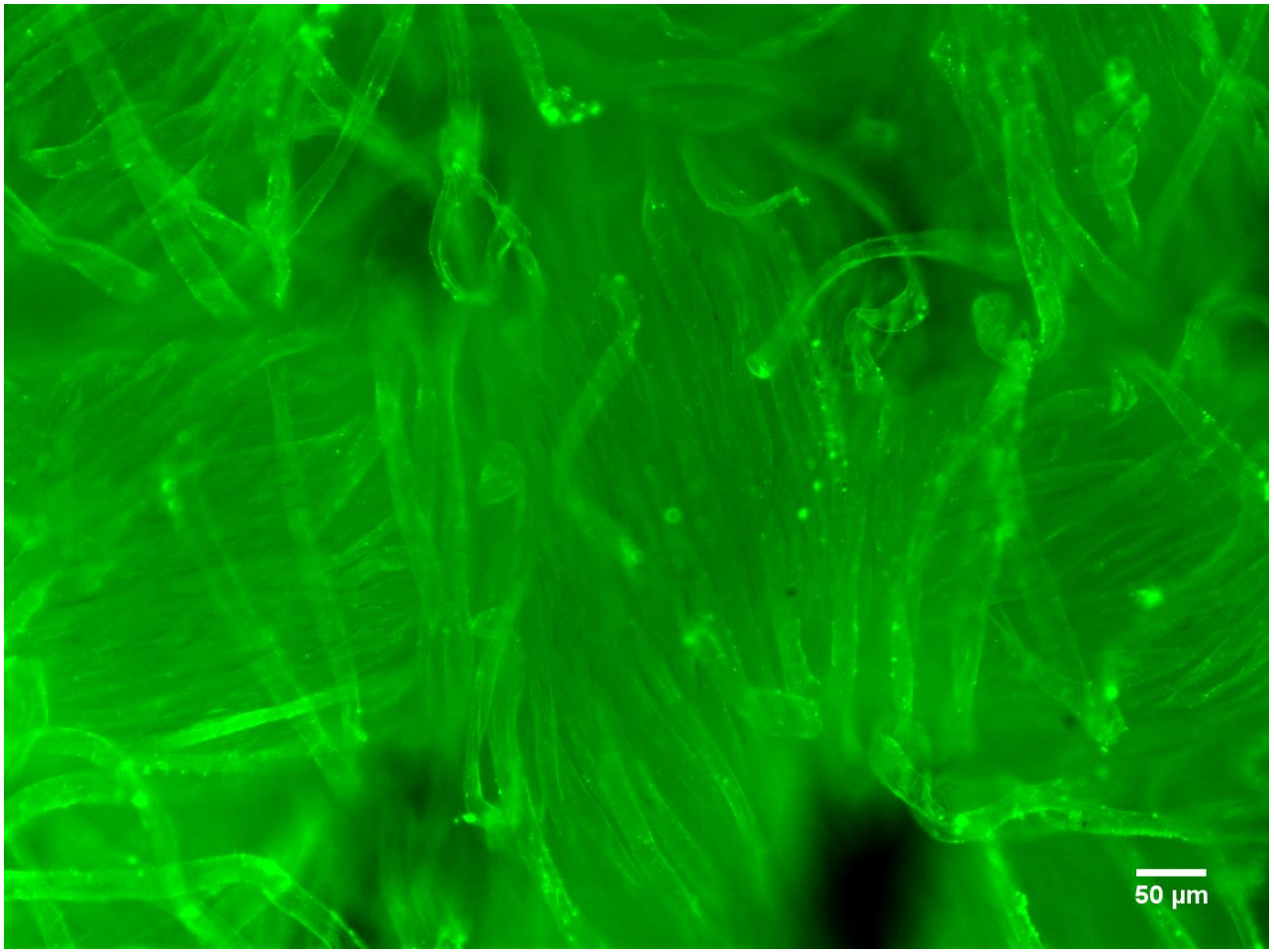


Image traitée



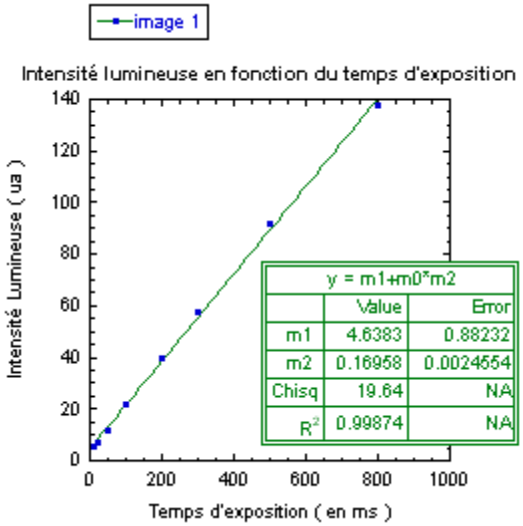
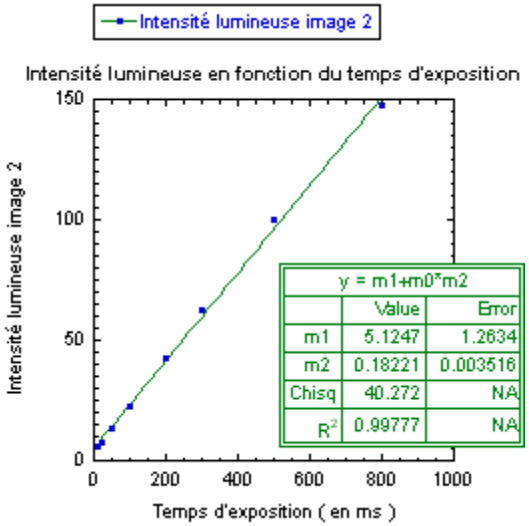


image 1
Intensité lumineuse en fonction du temps d'exposition
Intensité Lumineuse (ua)
Temps d'exposition (en ms)
y = m1+m0*m2
Value Error
m1 4.6383 0.88232
m2 0.16958 0.0024554
Chisq 19.64 NA
R² 0.99874 NA


Intensité lumineuse image 2
Intensité lumineuse en fonction du temps d'exposition
Intensité lumineuse image 2
Temps d'exposition (en ms)
y = m1+m0*m2
Value Error
m1 5.1247 1.2634
m2 0.18221 0.003516
Chisq 40.272 NA
R² 0.99777 NA

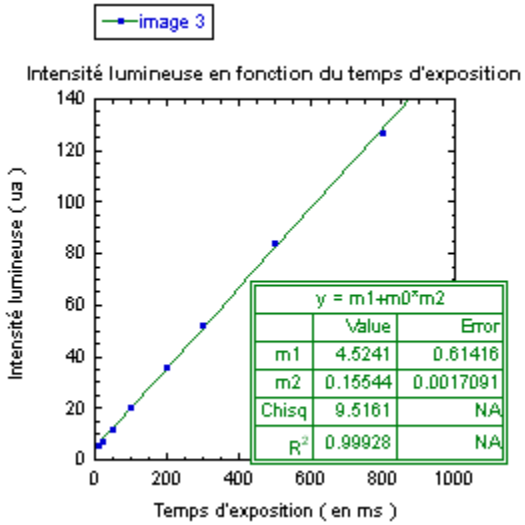


image 3
Intensité lumineuse en fonction du temps d'exposition
Intensité lumineuse (ua)
Temps d'exposition (en ms)
y = m1+m0*m2
Value Error
m1 4.5241 0.61416
m2 0.15544 0.0017091
Chisq 9.5161 NA
R² 0.99928 NA

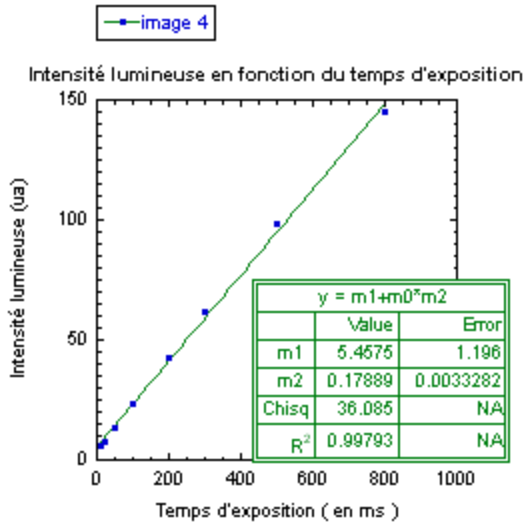


image 4
Intensité lumineuse en fonction du temps d'exposition
Intensité lumineuse (ua)
Temps d'exposition (en ms)
y = m1+m0*m2
Value Error
m1 5.4575 1.196
m2 0.17889 0.0033282
Chisq 36.085 NA
R² 0.99793 NA

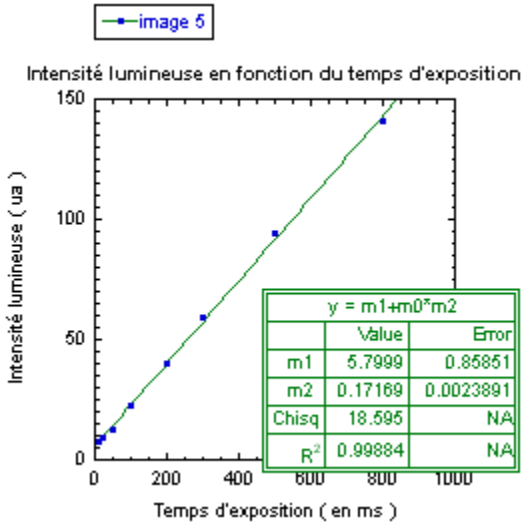
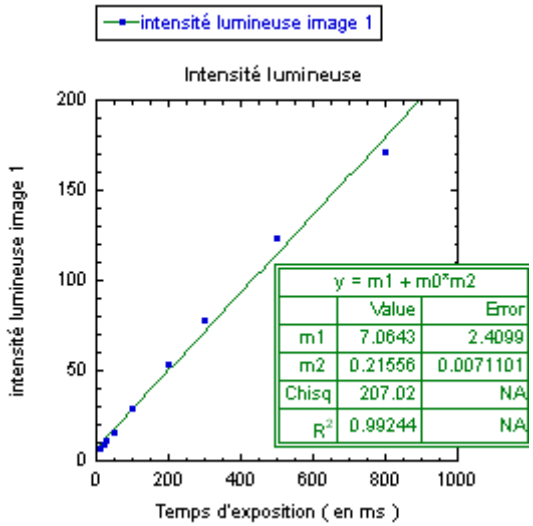
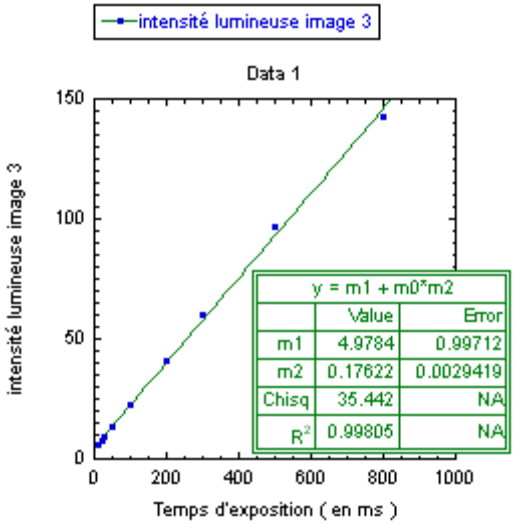
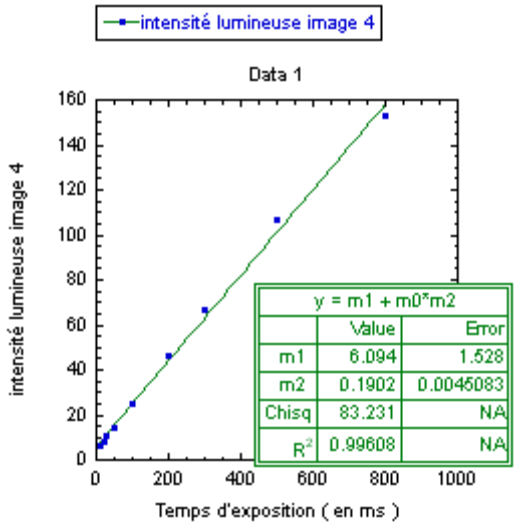


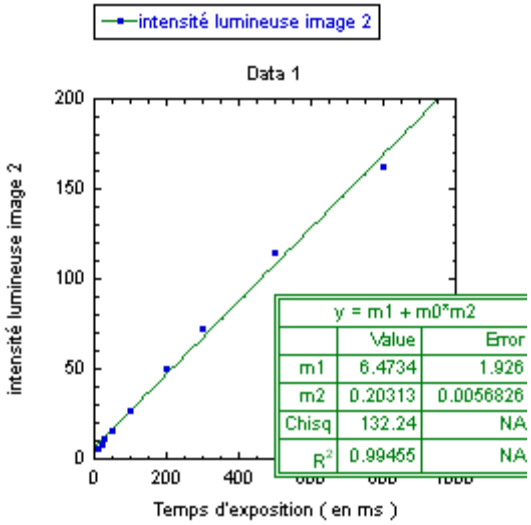
image 5
Intensité lumineuse en fonction du temps d'exposition
Intensité lumineuse (ua)
Temps d'exposition (en ms)
y = m1+m0*m2
Value Error
m1 5.7999 0.85851
m2 0.17169 0.0023891
Chisq 18.595 NA
R² 0.99884 NA

Coton ayant suivi le même protocole mais n'ayant pas été rincé

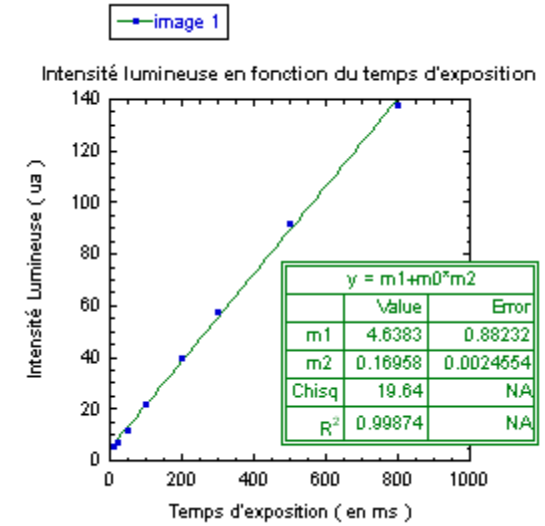


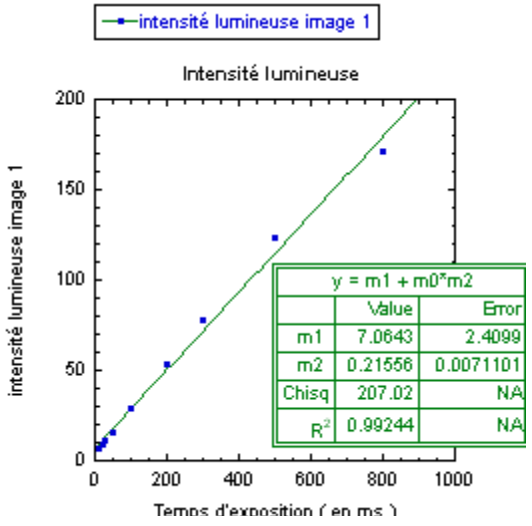


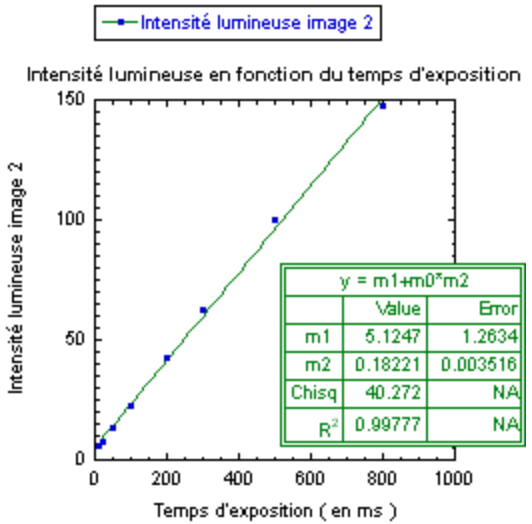


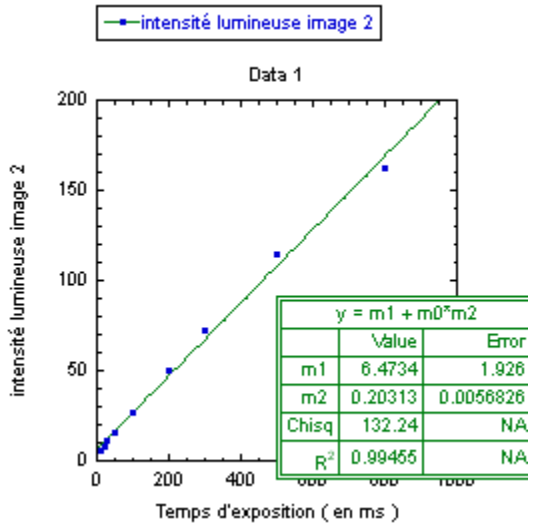


Comparaison entre le coton rincé 20s et celui observé sans rincage









A gauche: le coton rincé 20s
A droite: celui non rincé

Conclusion

- Je retrouve plus ou moins la même ordonnée à 0 comme prévu c'est-à-dire 4 . Je n'ai pas enlevé les points qui saturent. Pour le coton rincé, il semble que la saturation n'est pas atteinte. Pour celui non rincé, il faudrait enlever le point à 800ms.

Conditions expérimentales

- TEP 0.05%
- 10µL PKH67
- Trempé du 22 au 27 mai
- Rinçage 1min
- Microscope fluo x10 intensité 1 gain 1

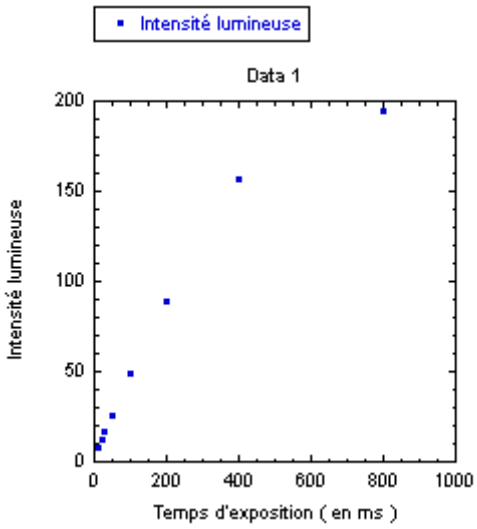


Image 5

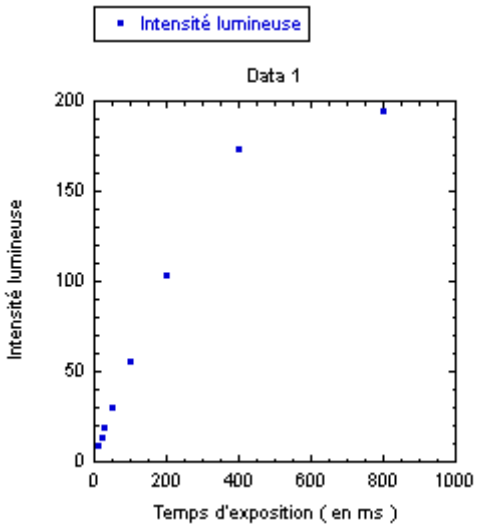


Image 4

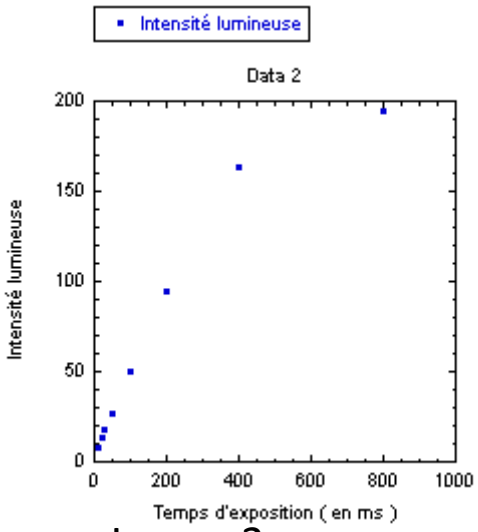


Image 3

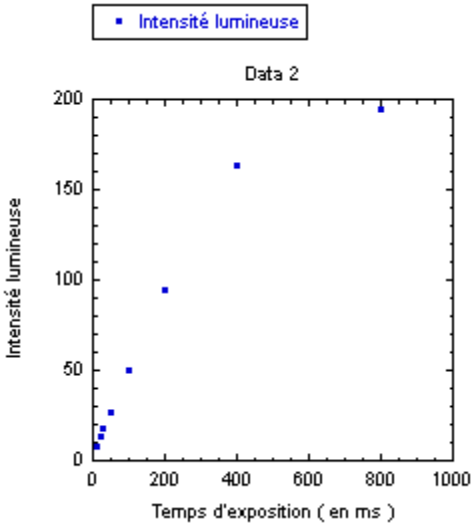


Image 2

On voit bien ici qu'il y a une saturation : l'évolution doit être linéaire

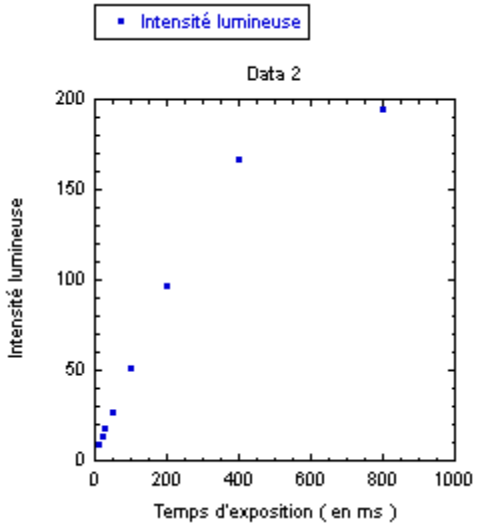


Image 1

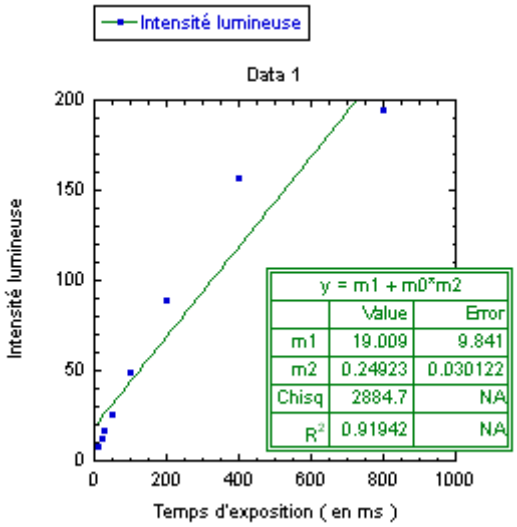


Image 5

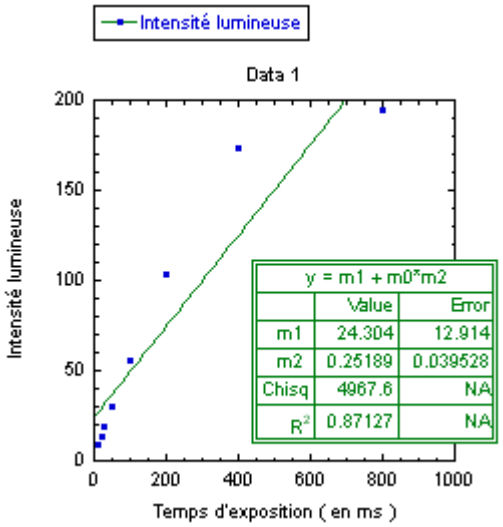


Image 4

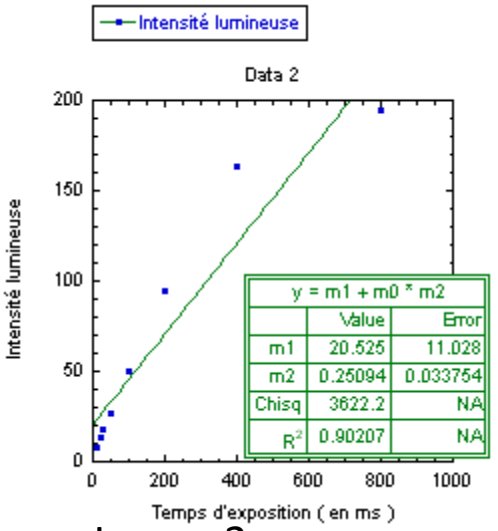


Image 3

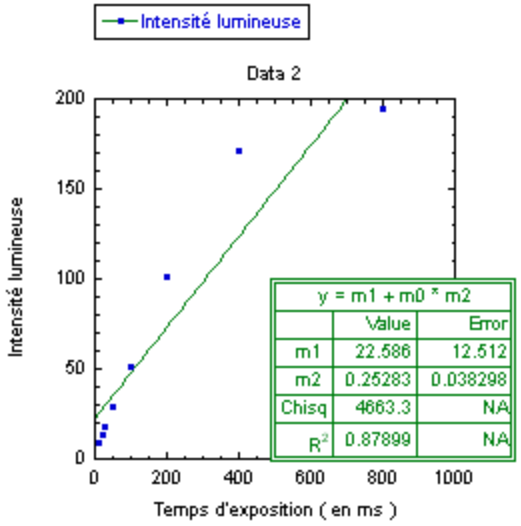


Image 2

Ici le R^2 n'est pas bon. On va exclure les points a 400 et 800 ms

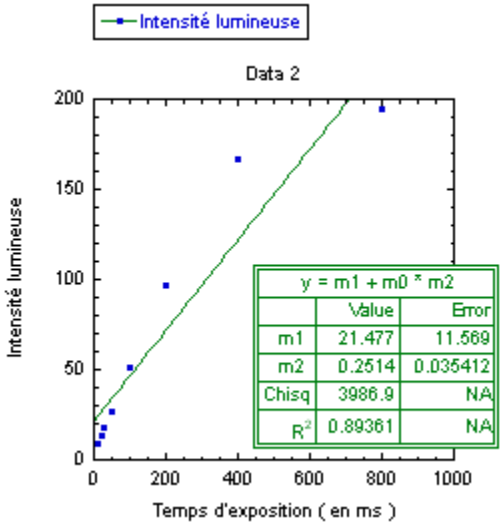


Image 1

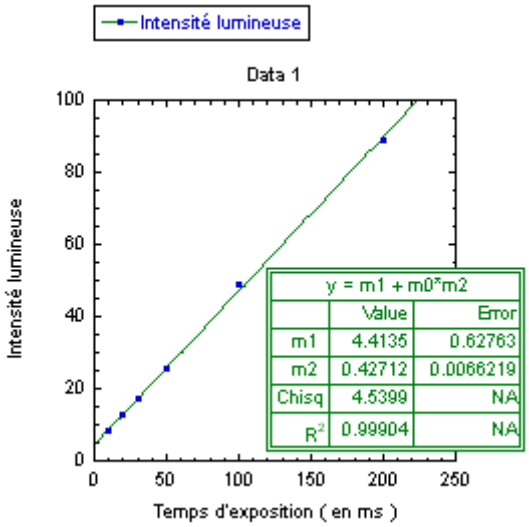


Image 5

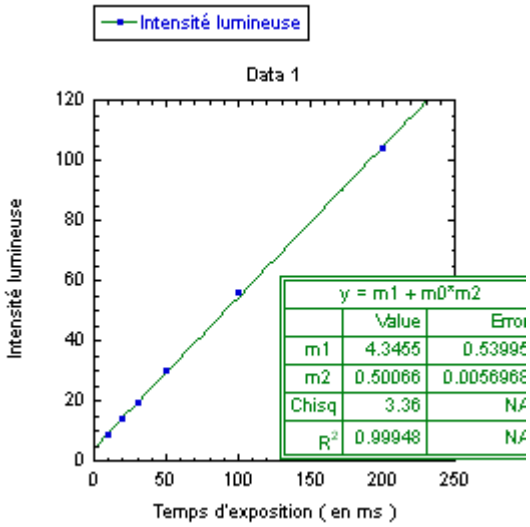


Image 4

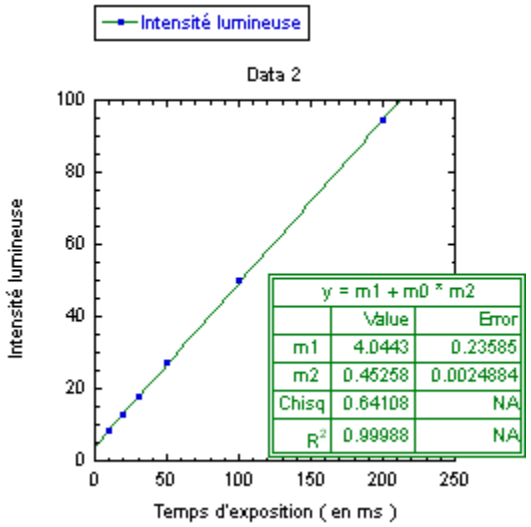


Image 3

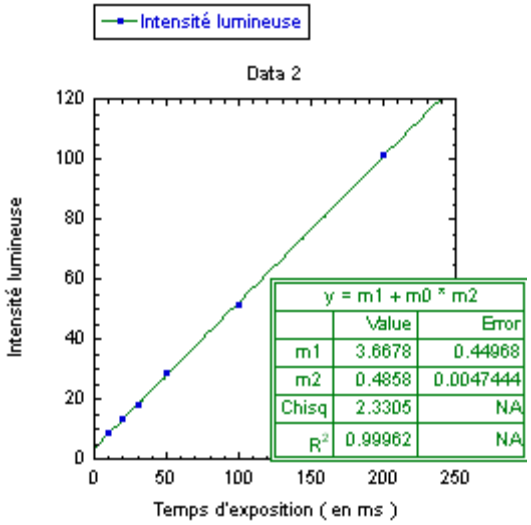


Image 2

Quand on enlève les points de la saturation on retrouve bien l'ordonnée à 0 de 4 environ.

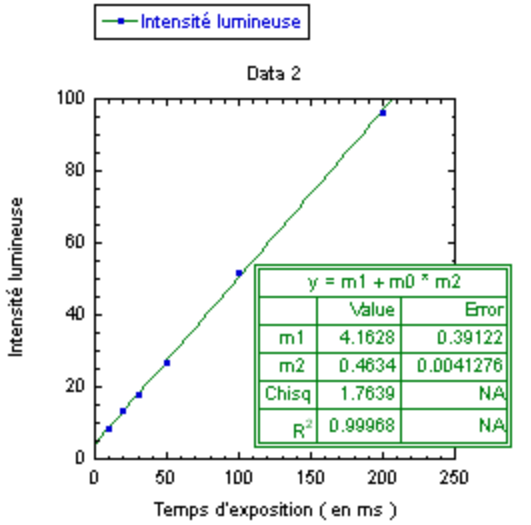
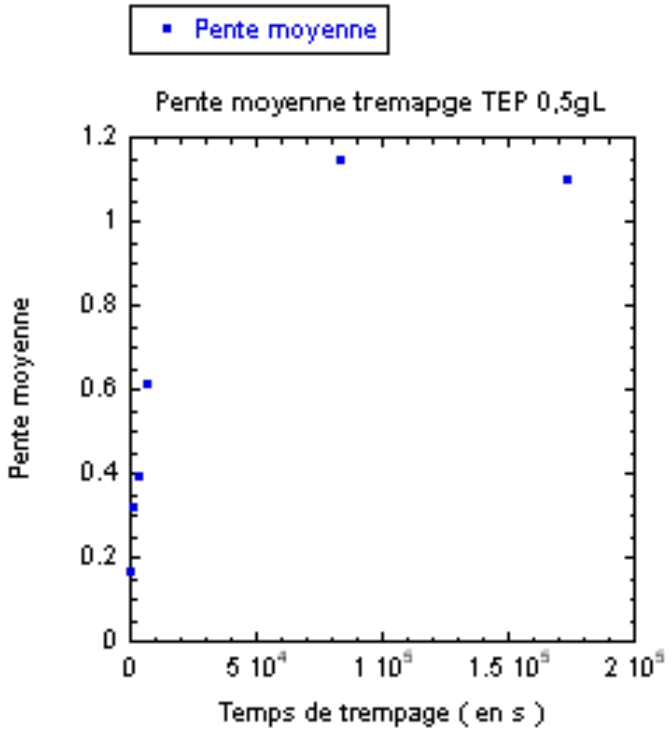


Image 1

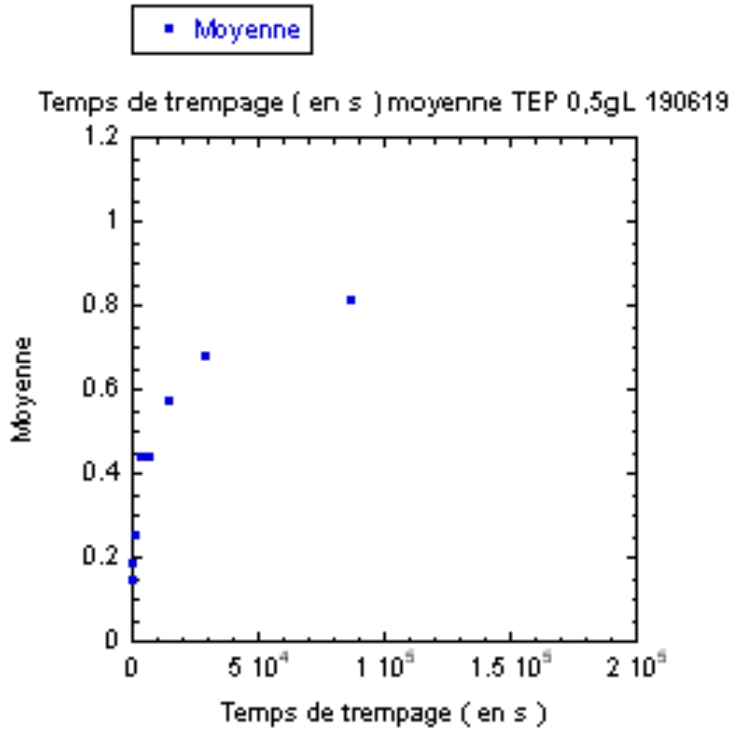
Conditions expérimentales

- On a 0,5g/L de TEP, manip faites deux fois.
- 0,03g de coton trempé dans 3mL de TEP + EAU + PKH67.
- Trempage entre 30s et 48h.
- Observé microscope x10 intensité 1 gain 1

TEP 0,5g/L 140619



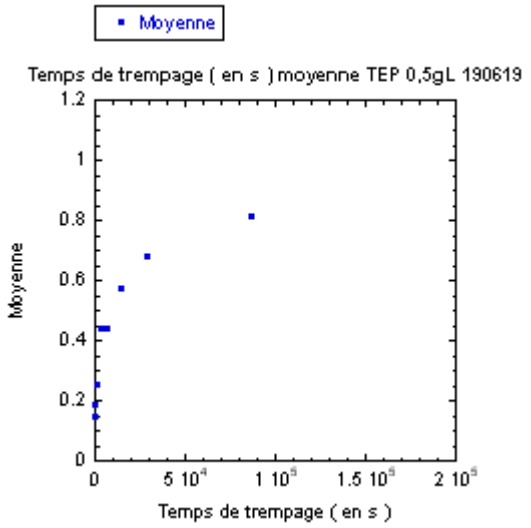
TEP 0,5g/L 190619



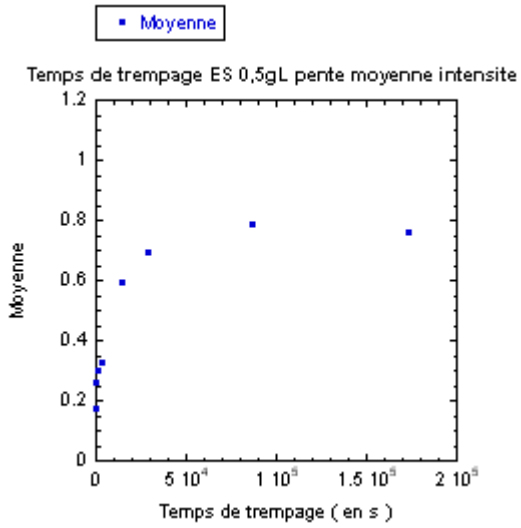
Conditions expérimentales

- ES 0,5g/L
- 0,03g de coton trempé dans ES.
- Même conditions que pour TEP

TEP 0,5g/L 190619



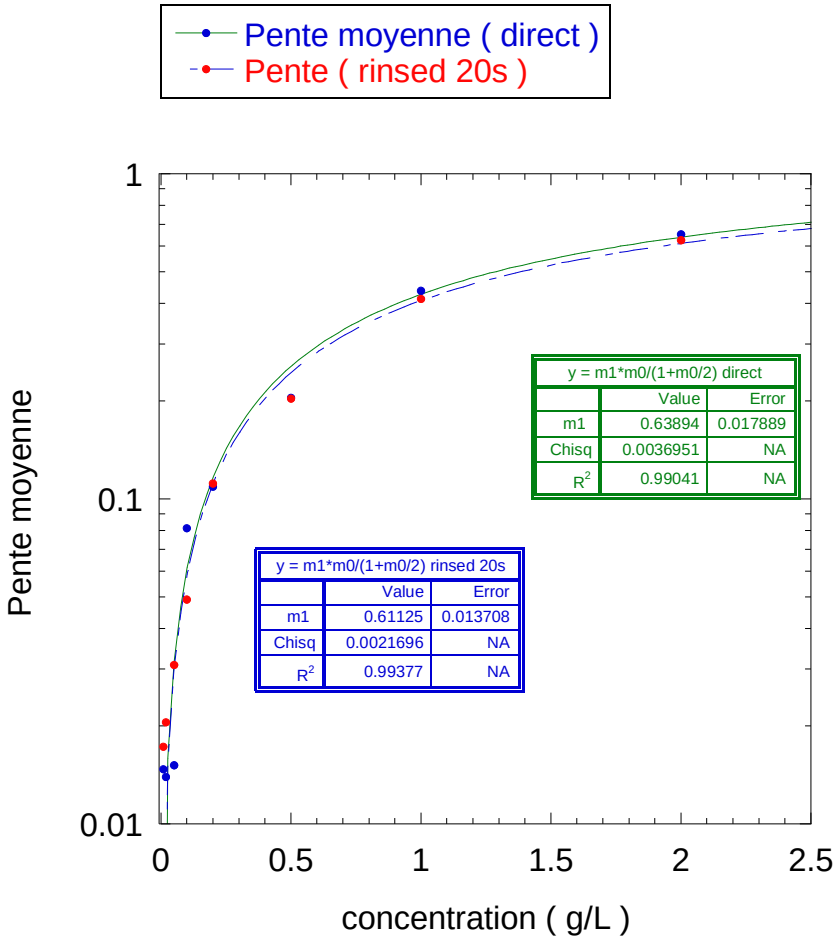
ES 0,5g/L 170619



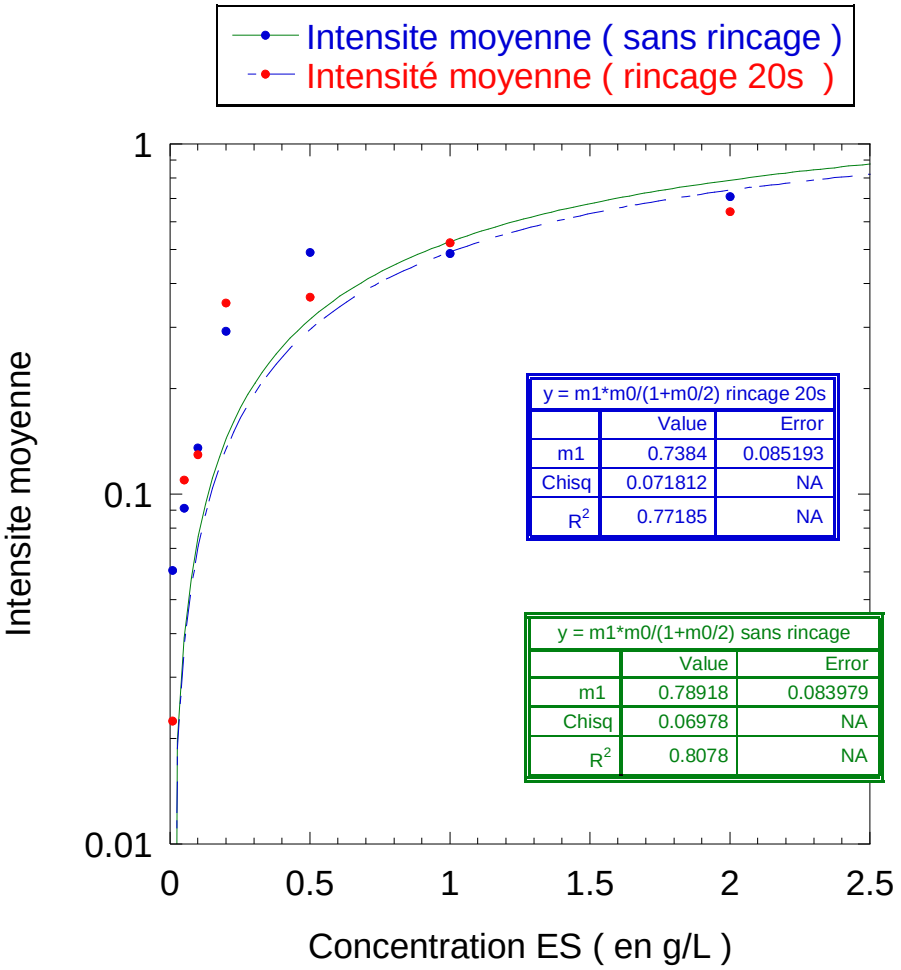
Concentration et intensité lumineuse

- TEP et ES concentré de 0.01g/L à 2g/L
- Rince avec milliQ W pendant 20s ou directement.
- 0.03g de coton.
- Analysé sur lamelle avec 40µL de milliQ.
- Pas de prise en compte des points qui saturent.
- Microscopie fluo x10 intensité 1 gain 1

TEP

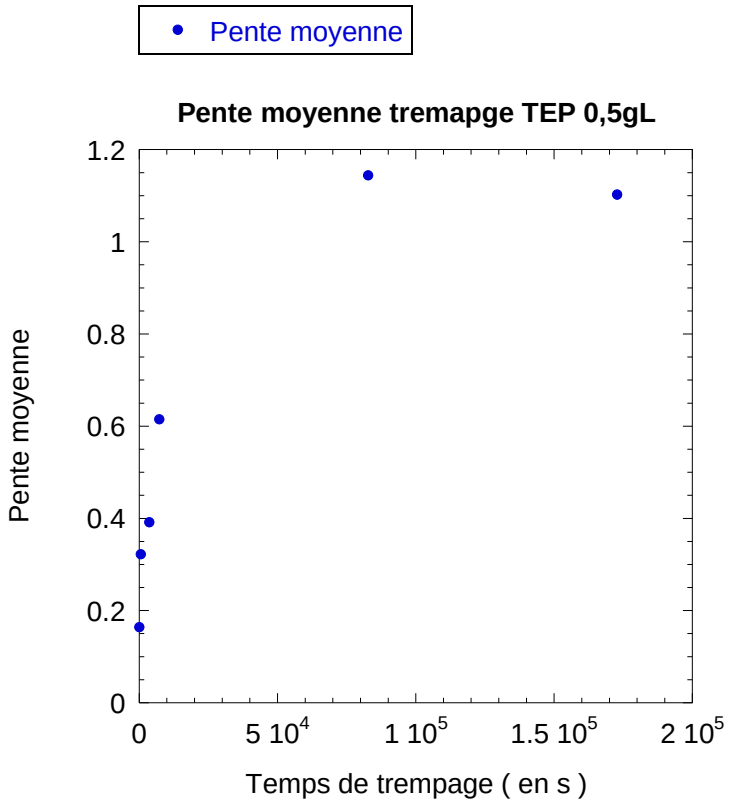

Pente moyenne (direct)
Pente (rinsed 20s)
Pente moyenne
concentration (g/L)
1
0.1
0.01
0
0.5
1
1.5
2
2.5
y = m1*m0/(1+m0/2) direct
Value
Error
m1
0.63894
0.017889
Chisq
0.0036951
NA
R2
0.99041
NA
y = m1*m0/(1+m0/2) rinsed 20s
Value
Error
m1
0.61125
0.013708
Chisq
0.0021696
NA
R2
0.99377
NA

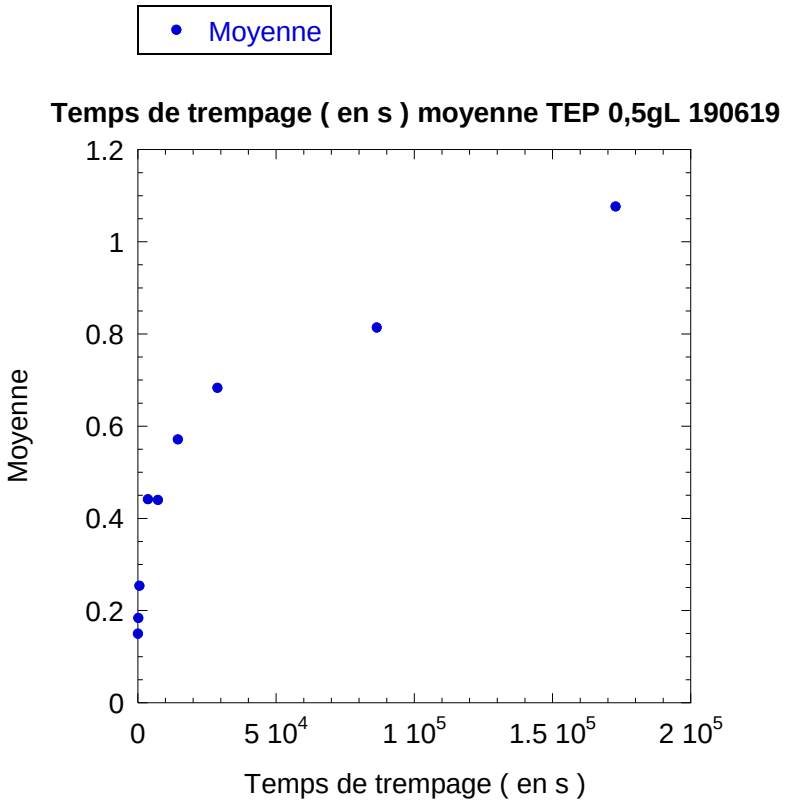
ES

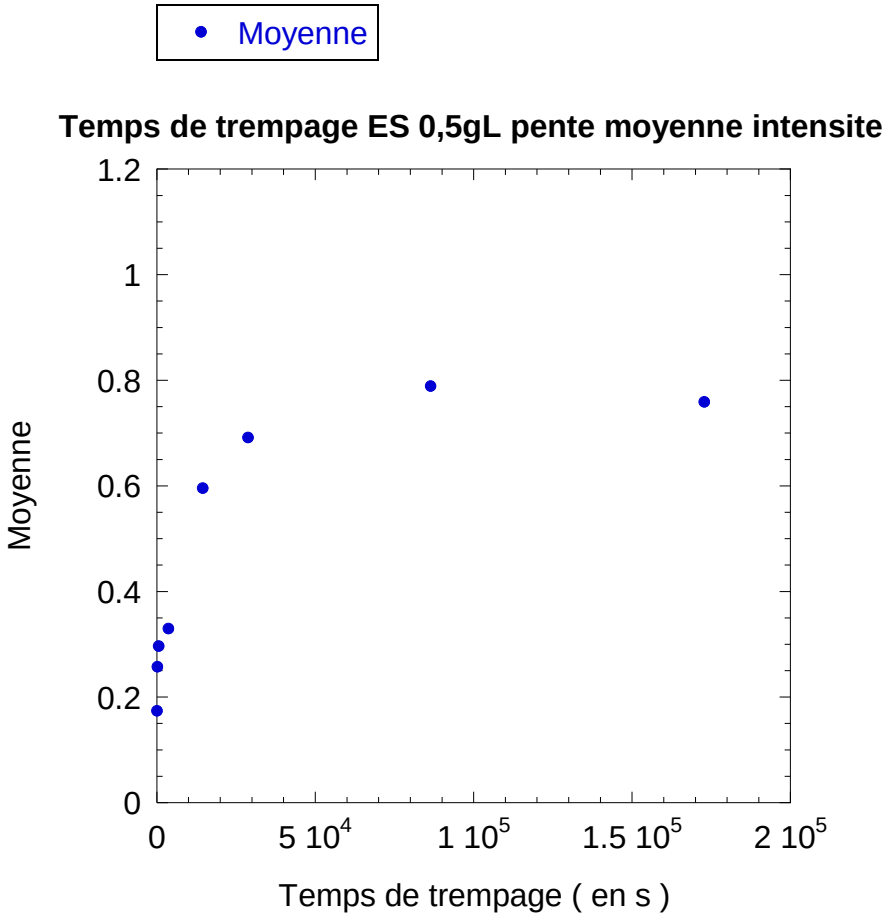

Intensite moyenne (sans rincage)
Intensité moyenne (rincage 20s)
Intensite moyenne
Concentration ES (en g/L)
1
0.1
0.01
0
0.5
1
1.5
2
2.5
y = m1*m0/(1+m0/2) rincage 20s
Value
Error
m1
0.7384
0.085193
Chisq
0.071812
NA
R2
0.77185
NA
y = m1*m0/(1+m0/2) sans rincage
Value
Error
m1
0.78918
0.083979
Chisq
0.06978
NA
R2
0.8078
NA

Influence temps de trempage

- ES et TEP 0,5g/L analysé avec 0.03g de coton
- rincé pendant 20s dans milliQ water.
- Analysé sur lamelle avec 40µL de milliQ.
- Trempé pendant 30s, 3min ,10min, 1h, 2h, 4h, 8h, 24h et 48h.
- Microscopie fluo x10 intensité 1 gain 1

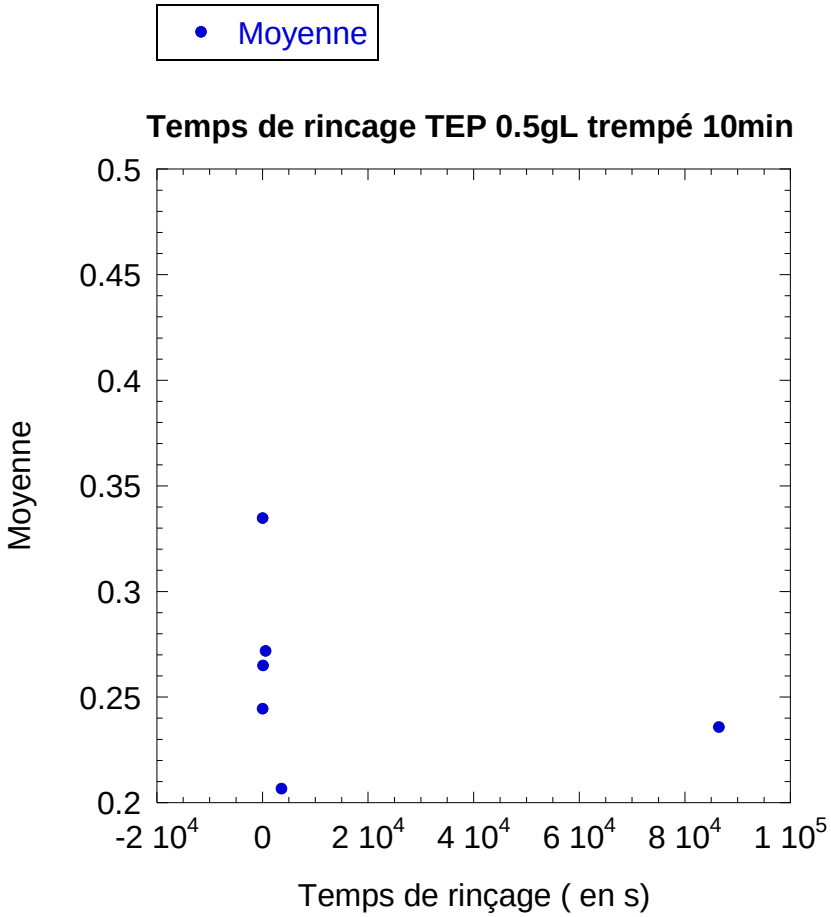

Pente moyenne
Pente moyenne tremapge TEP 0,5gL
Pente moyenne
Temps de trempage (en s)
0
0.2
0.4
0.6
0.8
1
1.2
0
5 10^4
1 10^5
1.5 10^5
2 10^5


Moyenne
Temps de trempage (en s) moyenne TEP 0,5gL 190619
Moyenne
Temps de trempage (en s)
0
0.2
0.4
0.6
0.8
1
1.2
0
5 10^4
1 10^5
1.5 10^5
2 10^5

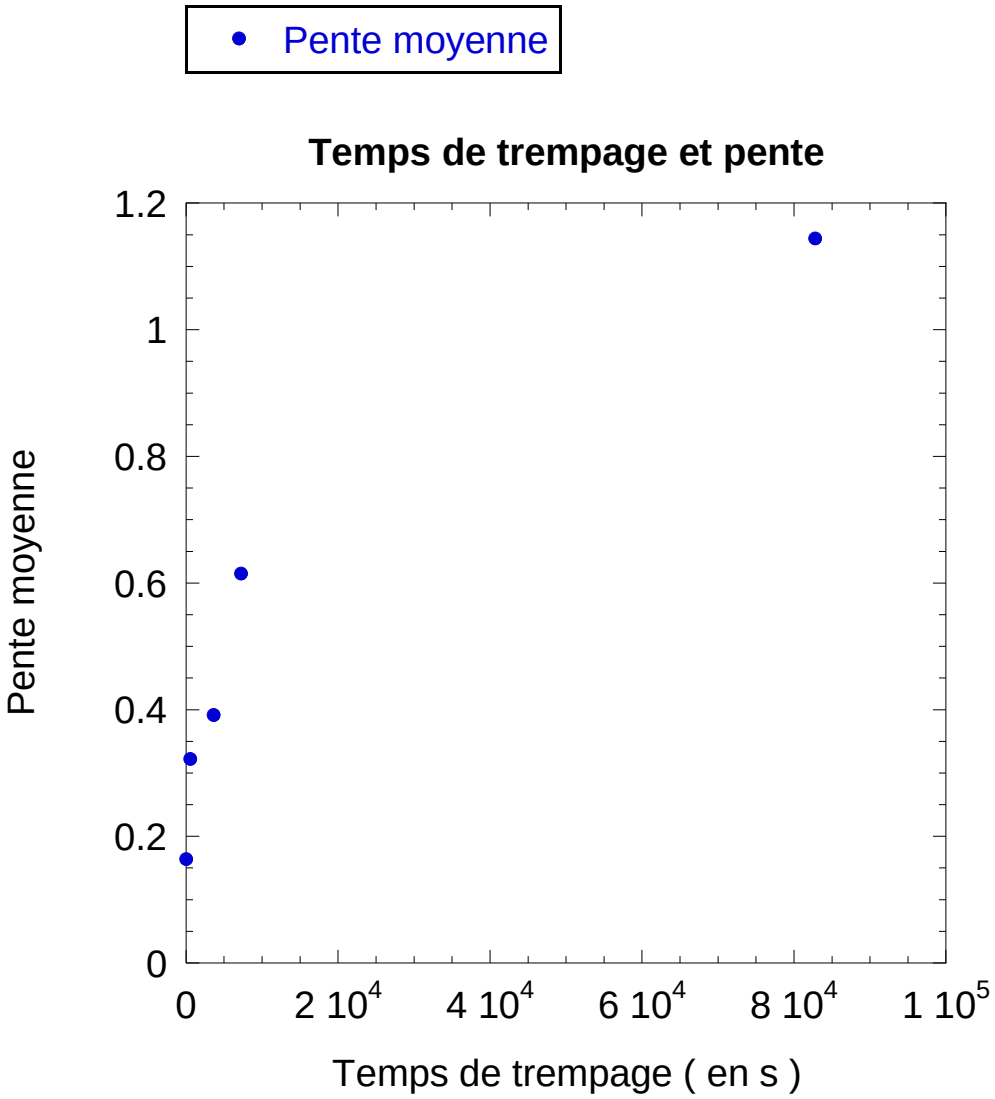

Moyenne
Temps de trempage ES 0,5gL pente moyenne intensite
1.2
1
0.8
0.6
0.4
0.2
0
Moyenne
0
5 10^4
1 10^5
1.5 10^5
2 10^5
Temps de trempage (en s)

Influence temps de trempage

- TEP à 0,5g/L trempé 10 min +PKH67 10µL
- Plusieurs temps de rinçage
- 0,03g de coton dans 3mL de solution rincé à la MilliQ et mis sur la lamelle avec 40µL de MilliQ


Moyenne
Temps de rincage TEP 0.5gL trempé 10min
0.5
0.45
0.4
0.35
0.3
0.25
0.2
Moyenne
-2 10^4
0
2 10^4
4 10^4
6 10^4
8 10^4
1 10^5
Temps de rinçage (en s)

- On trempe 0.03g de coton dans 3mL de TEP + PKH67 10µL concentré à 0.5g/L.
- Dans le premier cas, on regarde l'influence du temps de trempage dans la dispersion. On a laissé trempé 30s, 10min, 1h, 2h et 23h.
- Dans le second cas, on a laissé trempé 10 min et on a rincé dans de l'eau DI 0s (direct) 20s, 2 min, 10 min, 1h et 24h

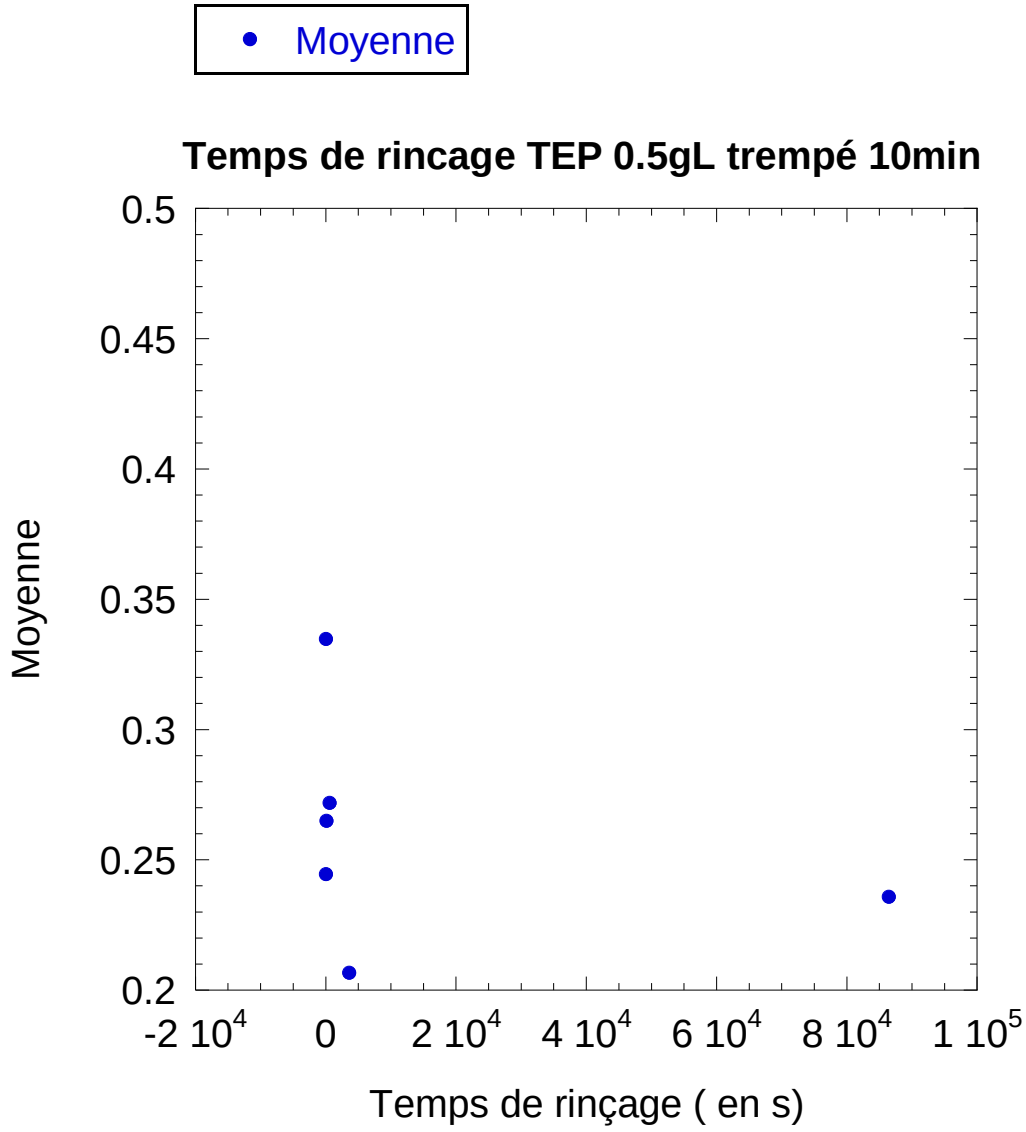

Pente moyenne
Temps de trempage et pente
Pente moyenne
1.2
1
0.8
0.6
0.4
0.2
0
0
2 10^4
4 10^4
6 10^4
8 10^4
1 10^5
Temps de trempage (en s)

Conclusion

- Il semble que le temps de trempage dans la dispersion a un impact sur la quantité de vésicule déposée sur les fibres de coton. En effet, plus on laisse longtemps, plus l'intensité lumineuse est grande donc plus il y a a priori de vésicules sur le coton. L'évolution à l'air d'atteindre un palier de saturation => a vérifier en ajoutant des points entre 2h et 23h et après 23h de trempage.

Etude influence temps de rinçage

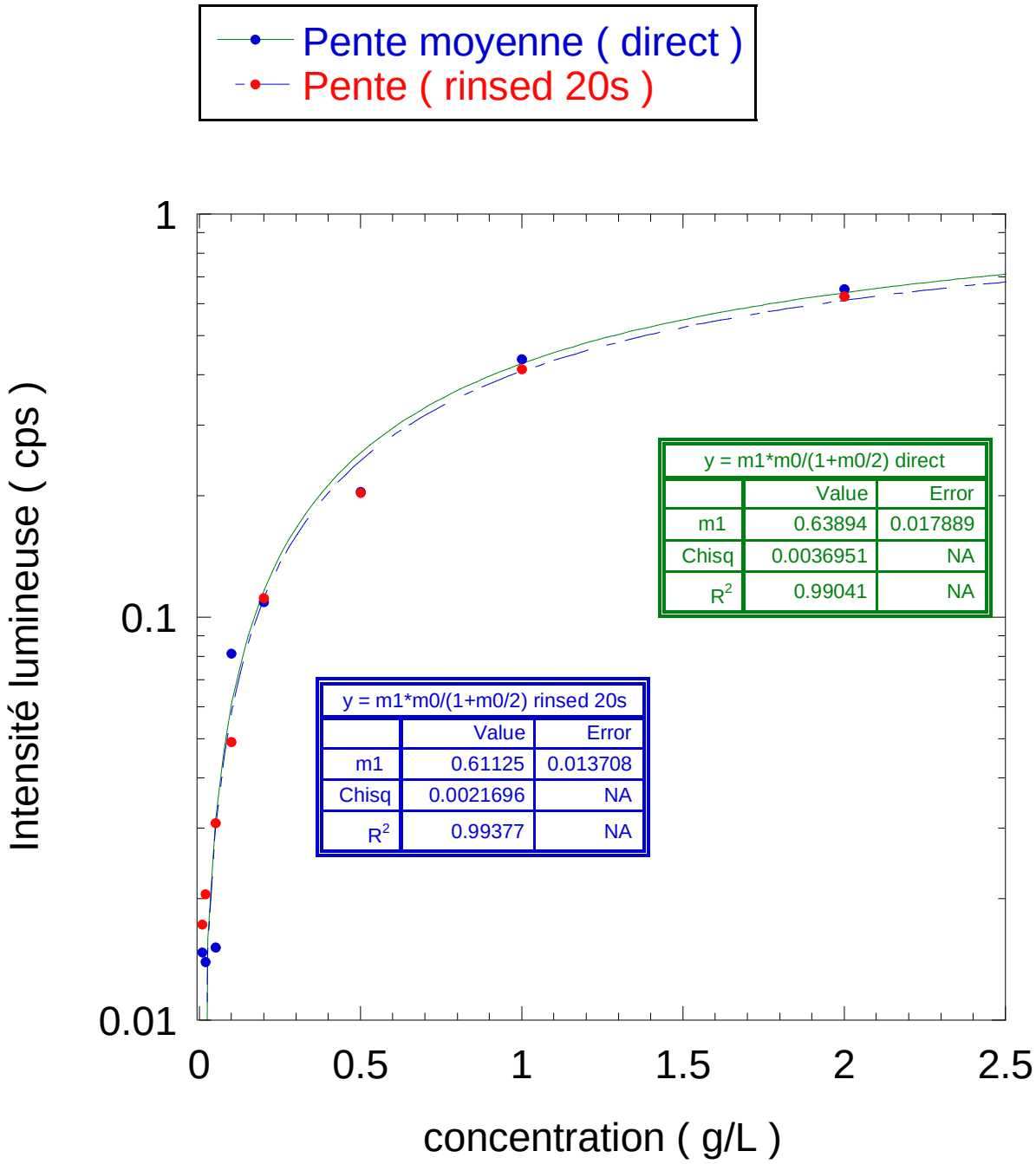
- Conditions expérimentales
  - 0,03g de coton trempé dans 3mL de TEP 0,5g/L avec 10µL de PKH67 pendant 10 min
  - Plusieurs temps de rinçage (0 s à 24h)
  - Microscopie fluo x10 intensité 1 gain 1


Moyenne
Temps de rincage TEP 0.5gL trempé 10min
0.5
0.45
0.4
0.35
0.3
0.25
0.2
Moyenne
-2 10^4
0
2 10^4
4 10^4
6 10^4
8 10^4
1 10^5
Temps de rinçage (en s)

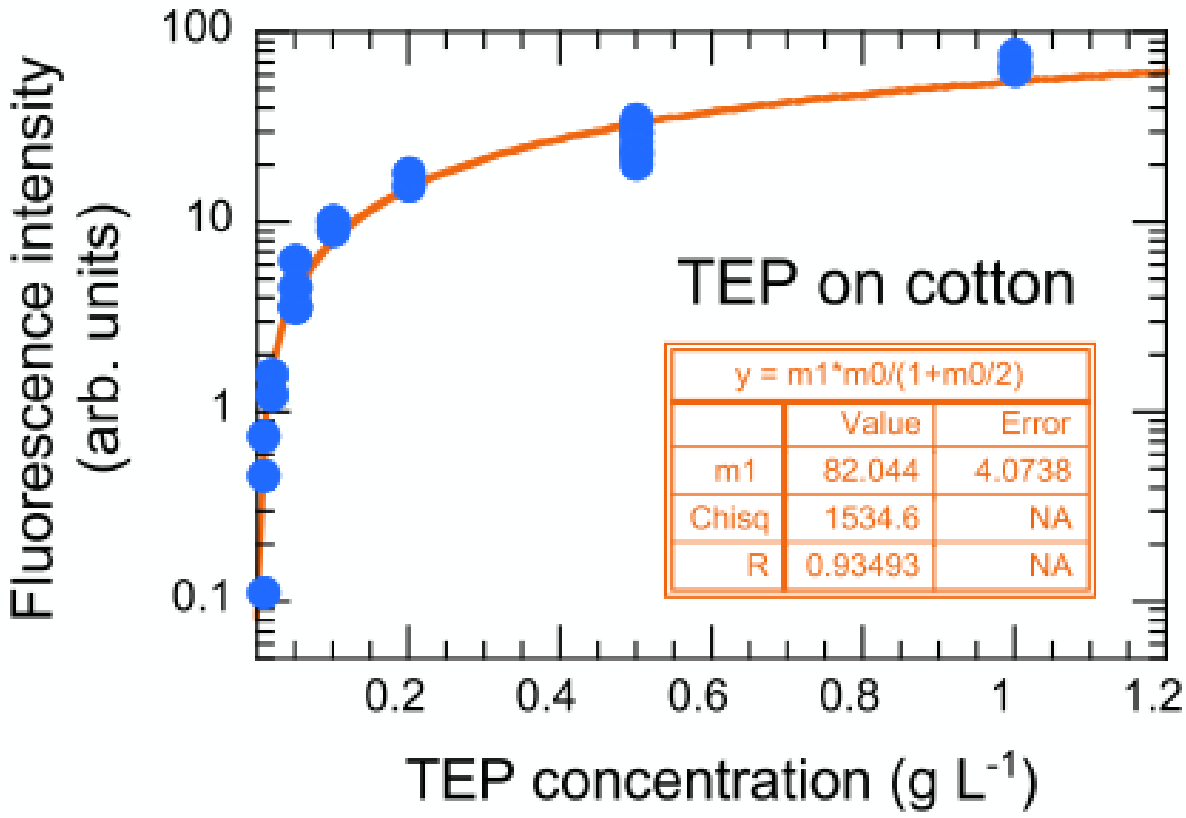
- Il semble que le rinçage et le temps de rinçage n’ont pas d’effet vraiment notable sur la quantité de vésicule sur le coton. Observé directement sans rinçage, le coton semble légèrement plus lumineux, mais peu importe combien de temps on le rince il reste plus ou moins toujours aussi lumineux.

Concentration TEP

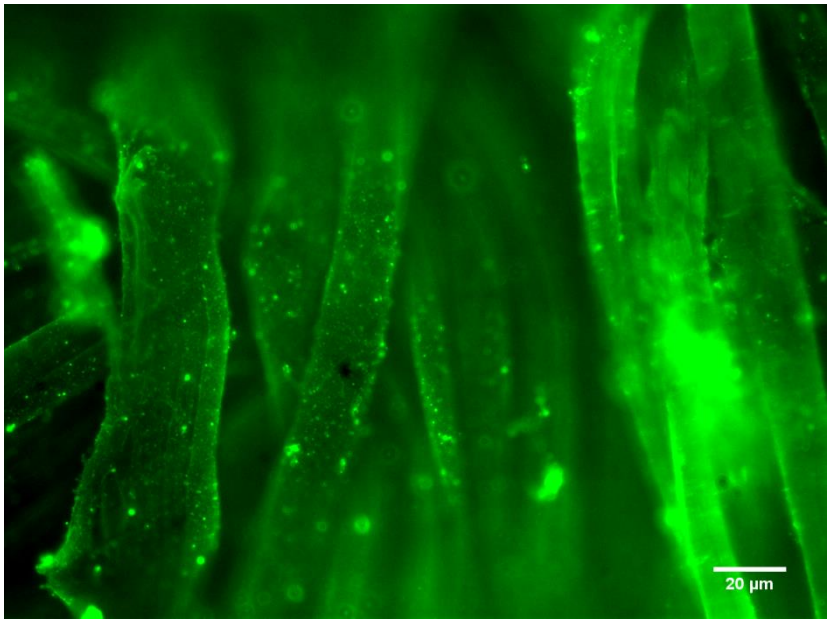
- 0.0,3 de coton TEP de 0,01 à 2g/L pendant 10min
- Rinçage soit 0s soit 20s
- Microscope fluo x10 intensité 1 gain 1 sur lamelle avec 40µL milliQ water

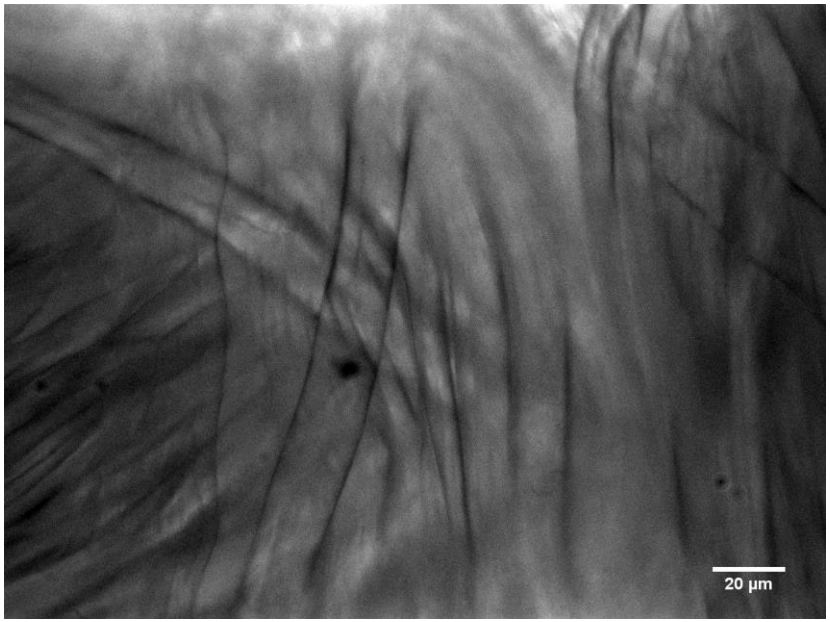

Pente moyenne (direct)
Pente (rinsed 20s)
Intensité lumineuse (cps)
1
0.1
0.01
0
0.5
1
1.5
2
2.5
concentration (g/L)
y = m1*m0/(1+m0/2) direct
Value
Error
m1
0.63894
0.017889
Chisq
0.0036951
NA
R2
0.99041
NA
y = m1*m0/(1+m0/2) rinsed 20s
Value
Error
m1
0.61125
0.013708
Chisq
0.0021696
NA
R2
0.99377
NA

The fitting curve is a Langmuir isotherm

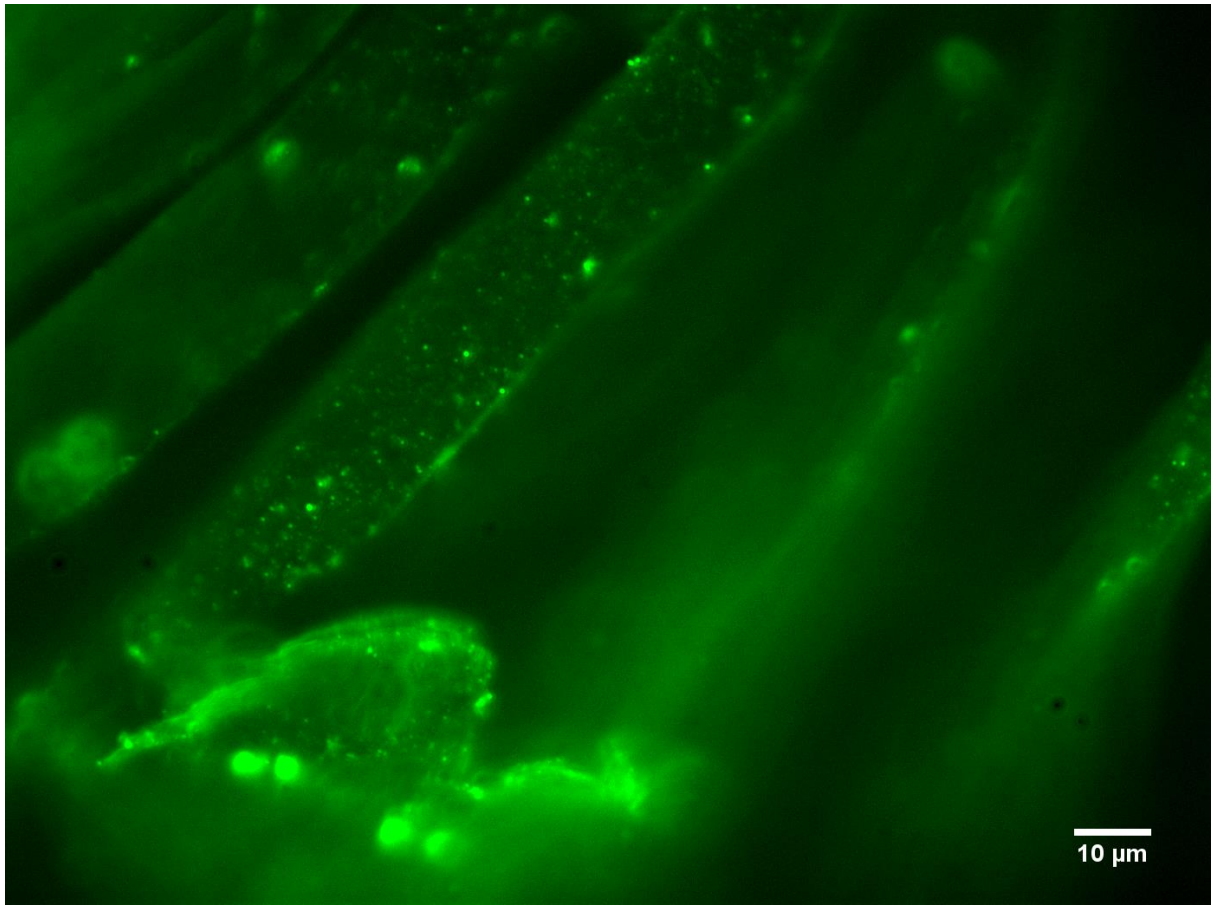


TEP 0.05% x40 opposition fluo / phase contrast

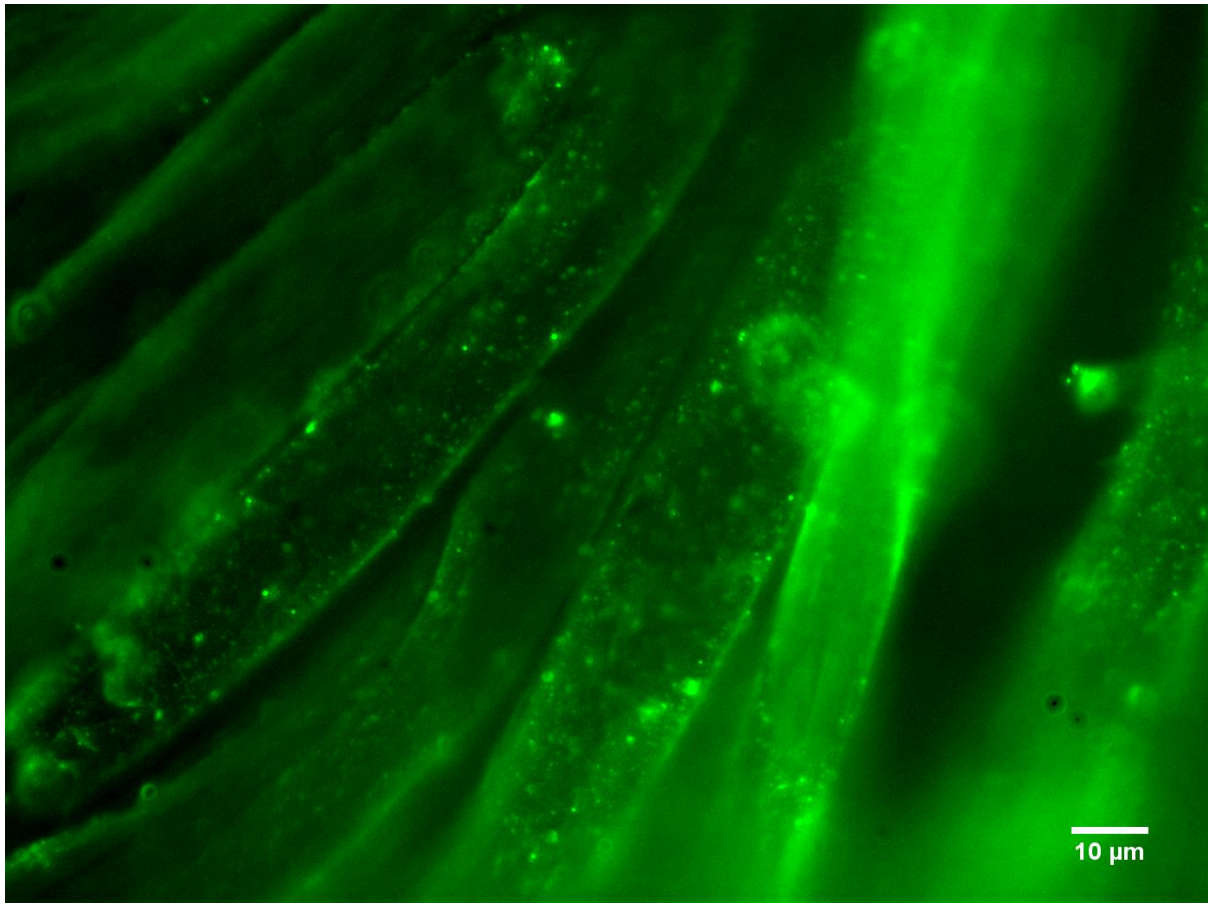




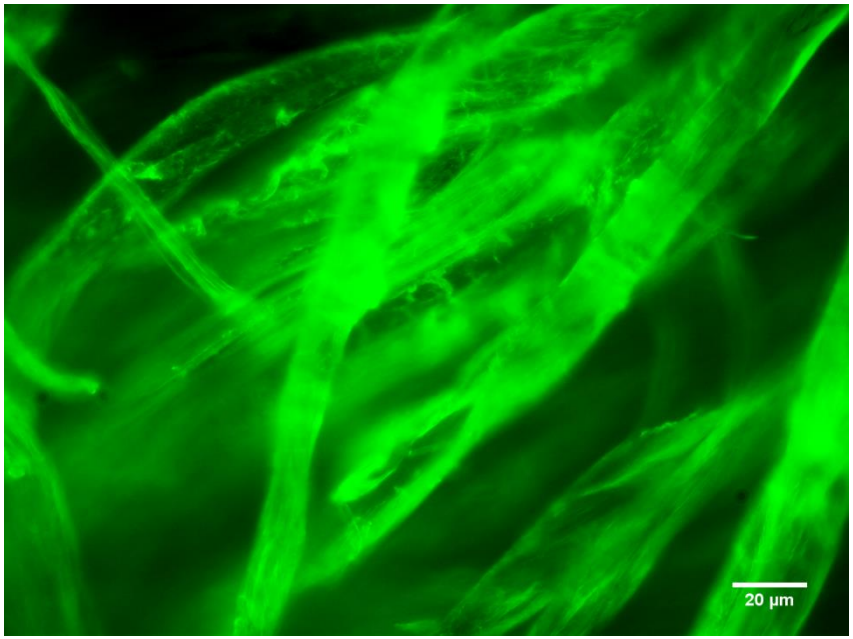
TEP 0.05% rincé 20s x60

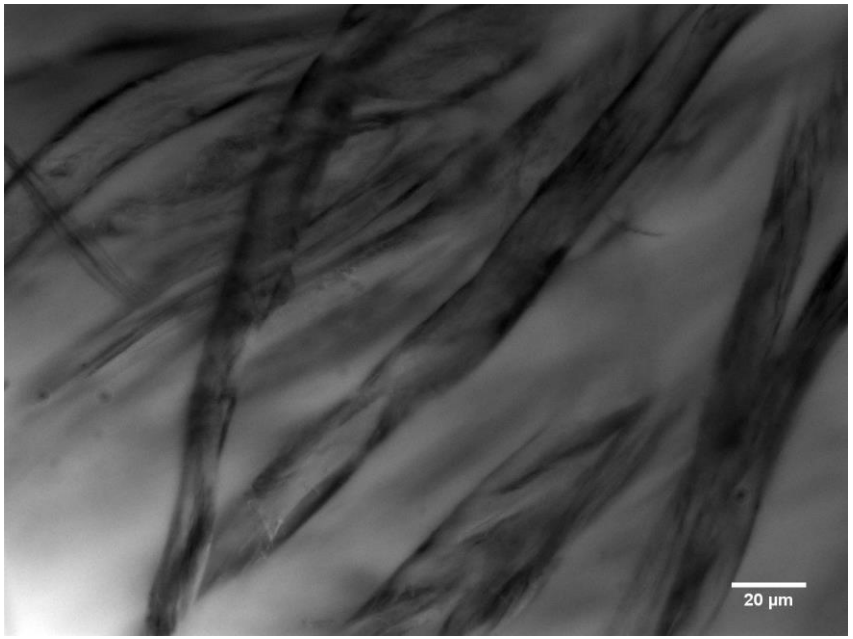


TEP 0.05% rincé 20s x60

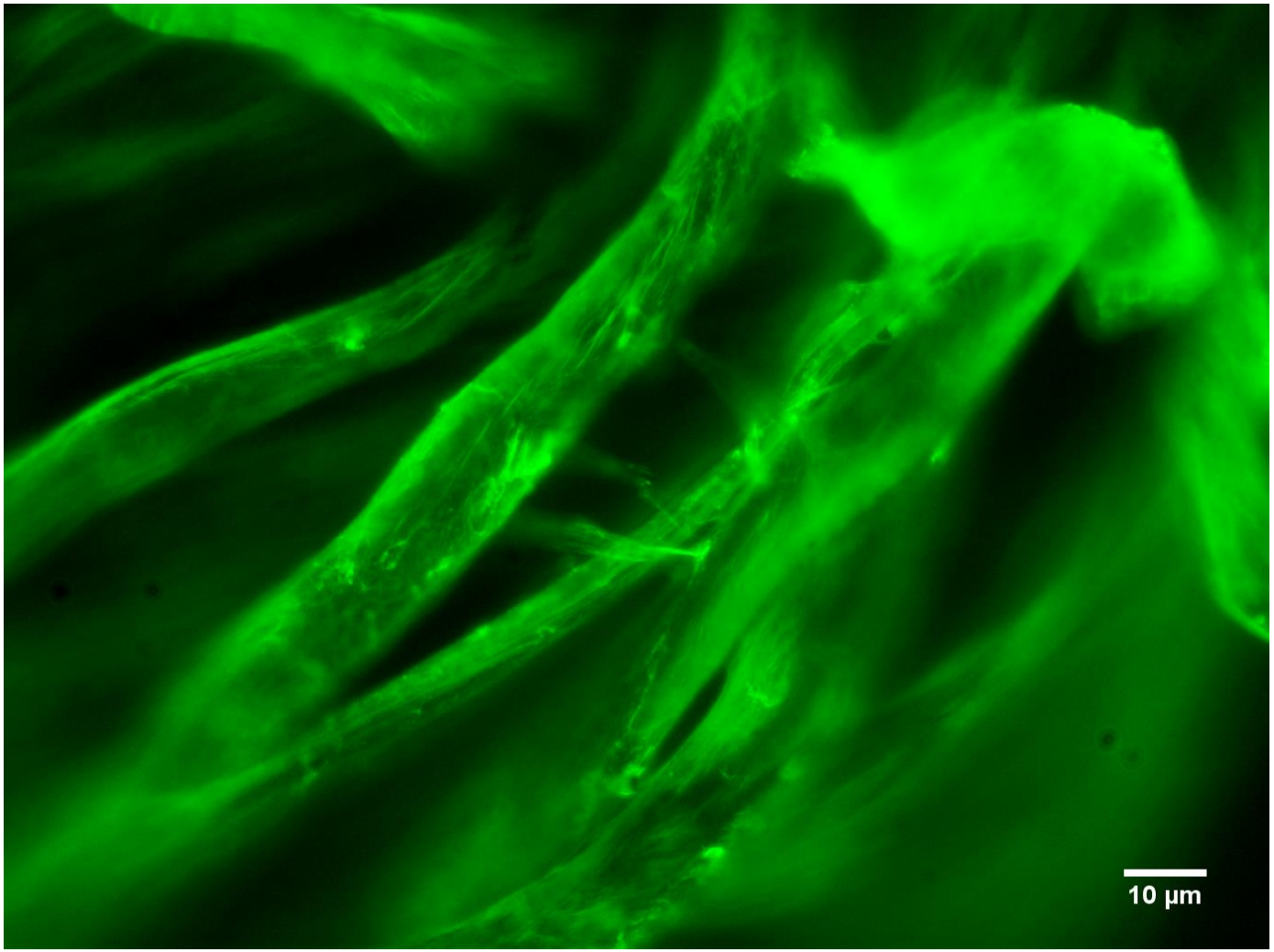


TEP 0.05% rinsed 20s dried x40 opposition fluo / bright field

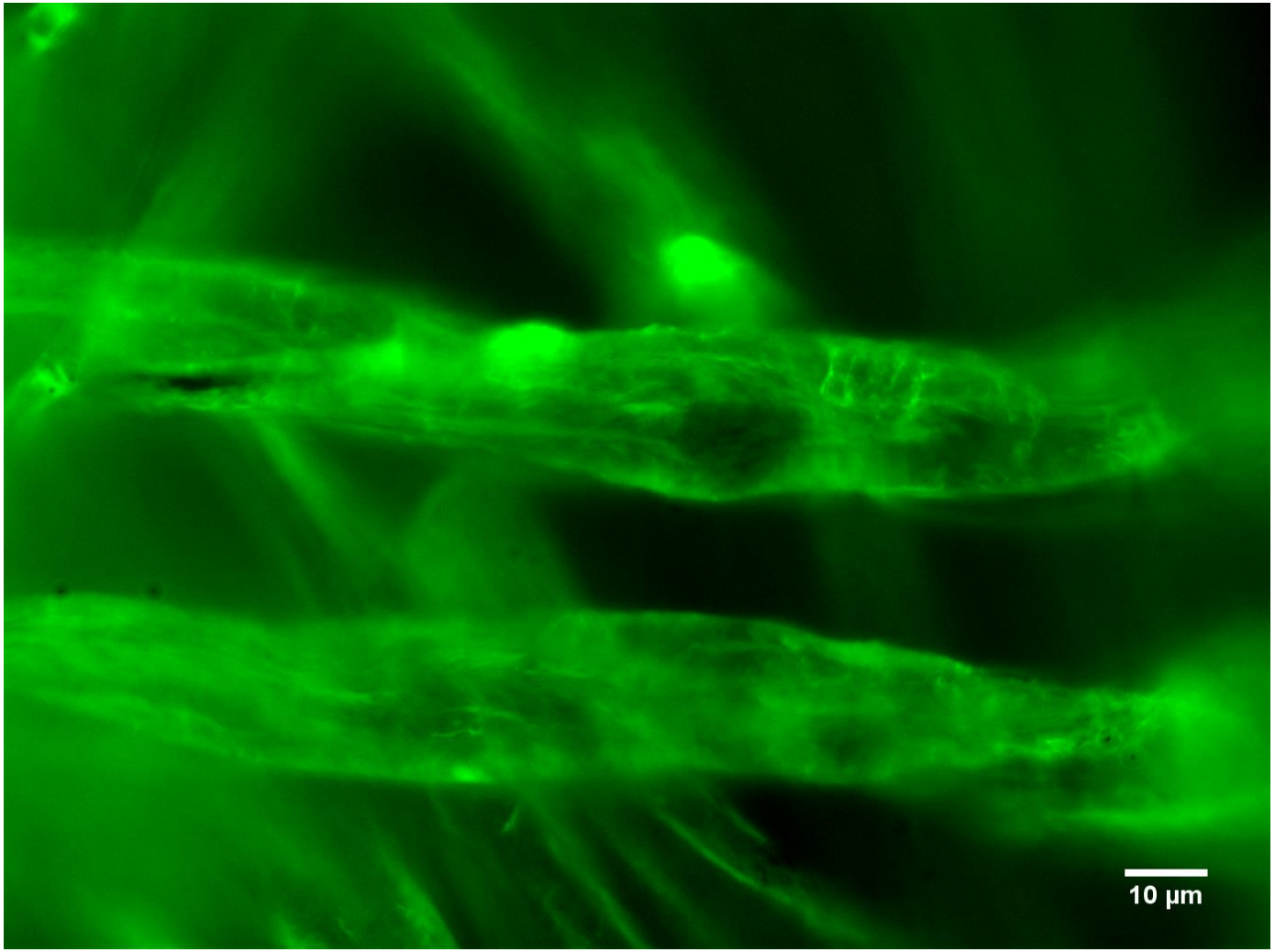




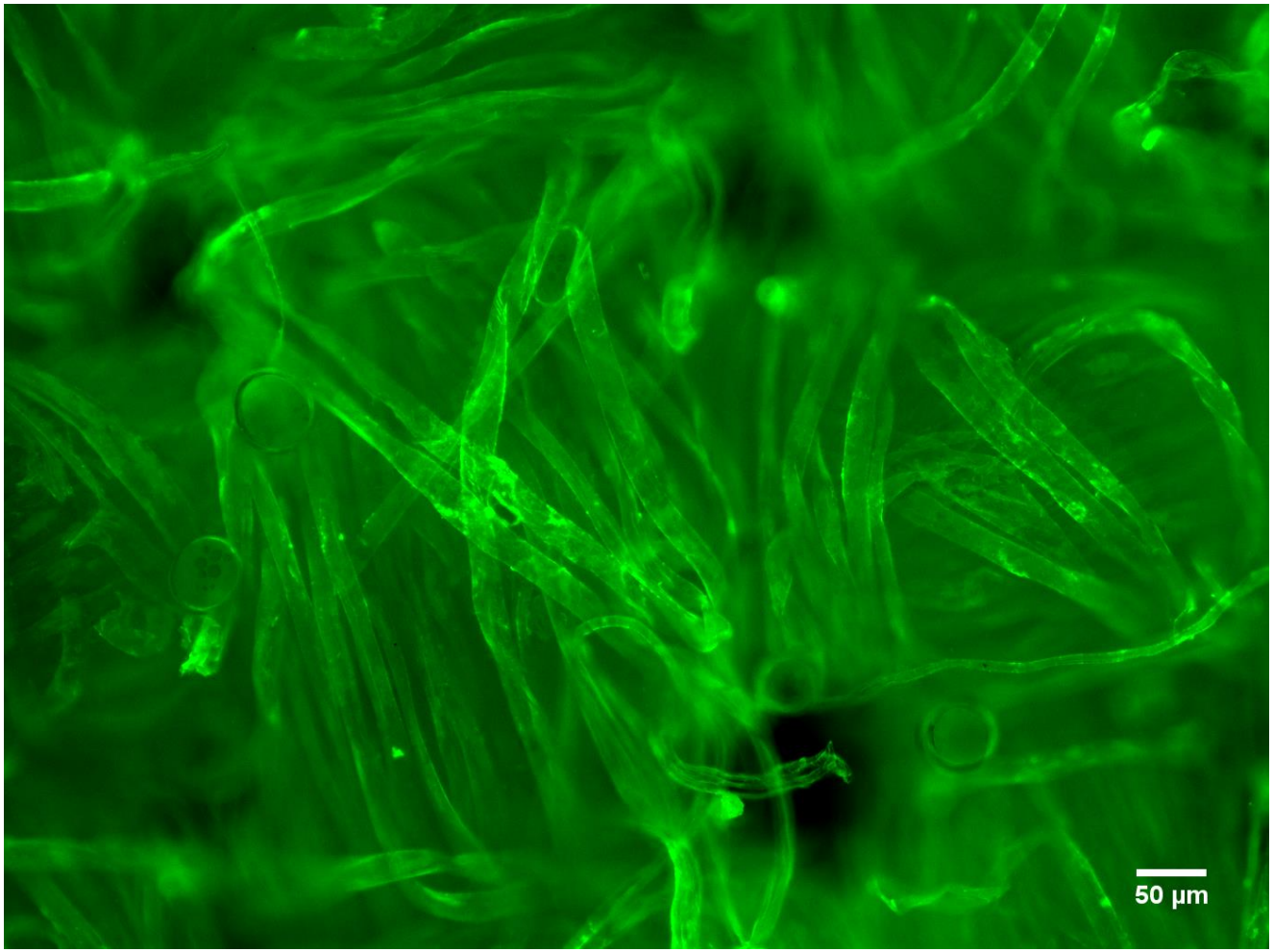
TEP 0.05% rincé 20s séché x60



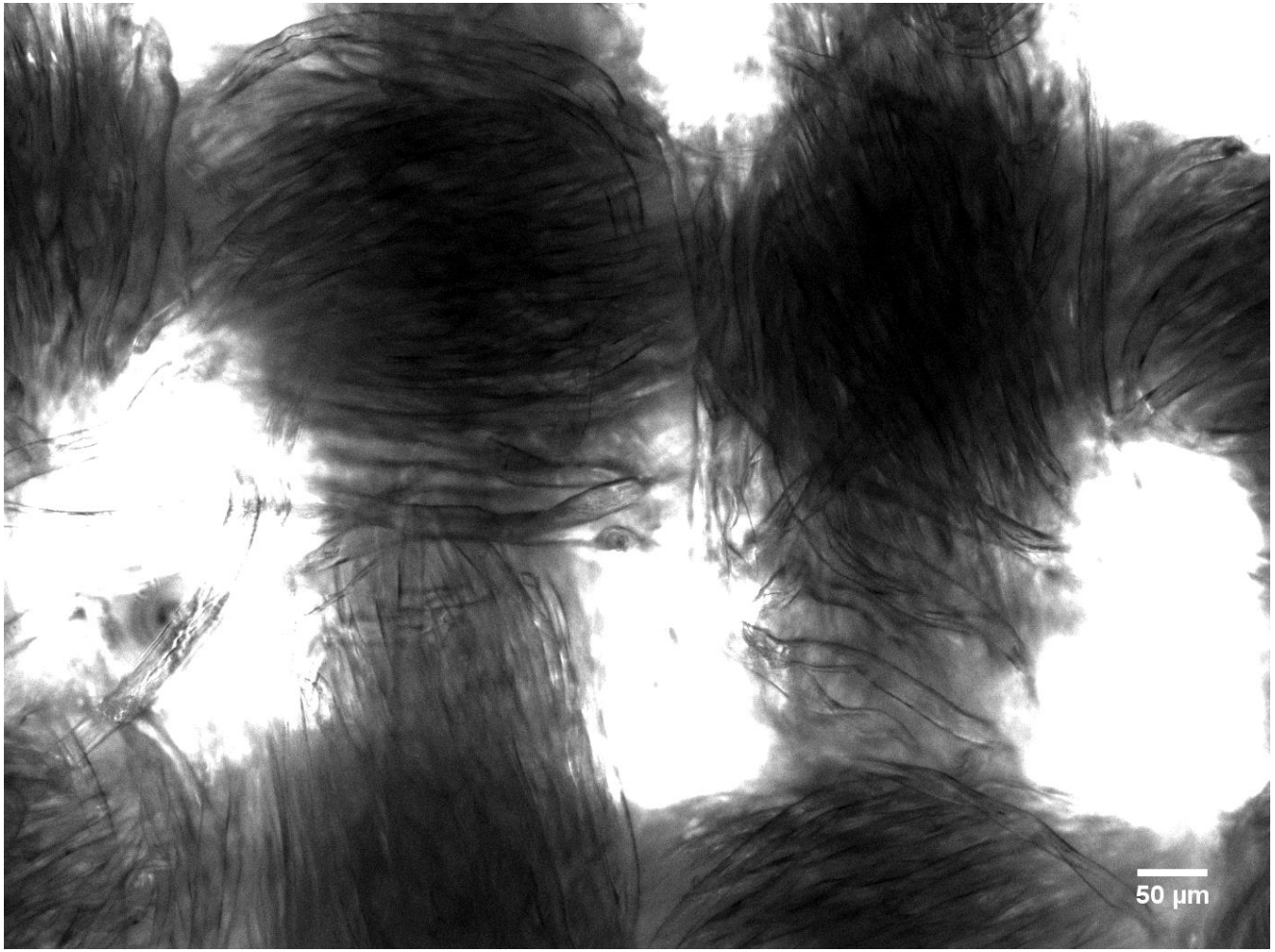
TEP 0.05% rincé 20s séché x60



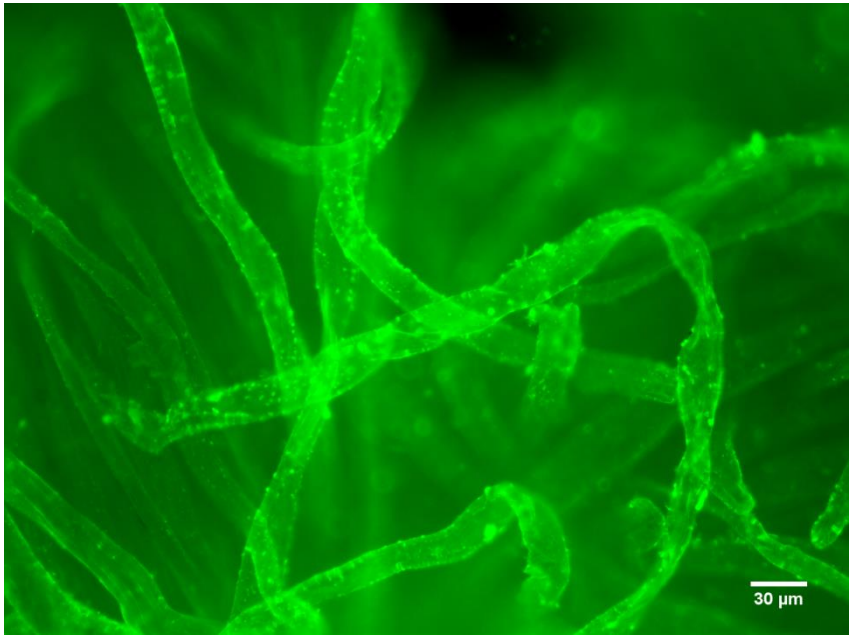
TEP 0.05% séché remouilléx10

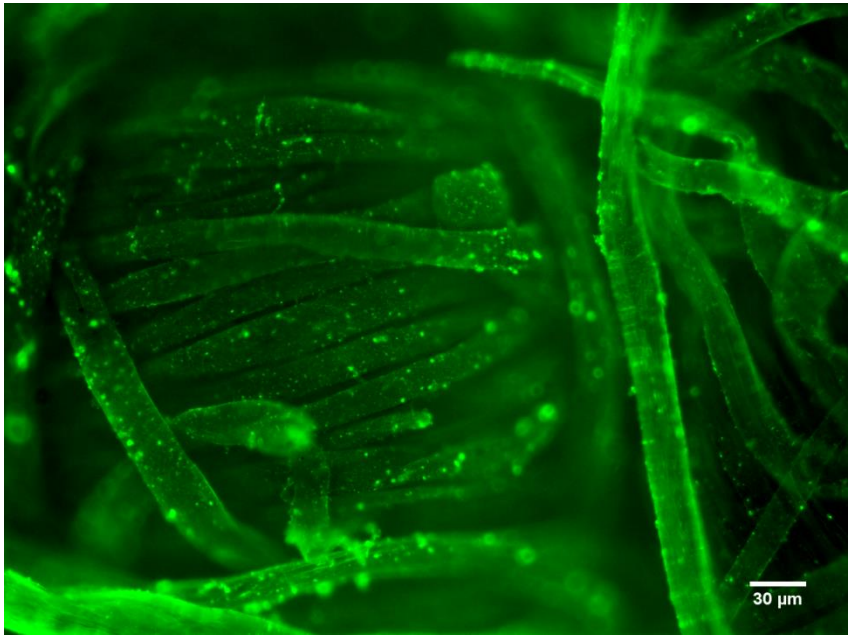


TEP 0.05% observé sans rinçage x10 bright field

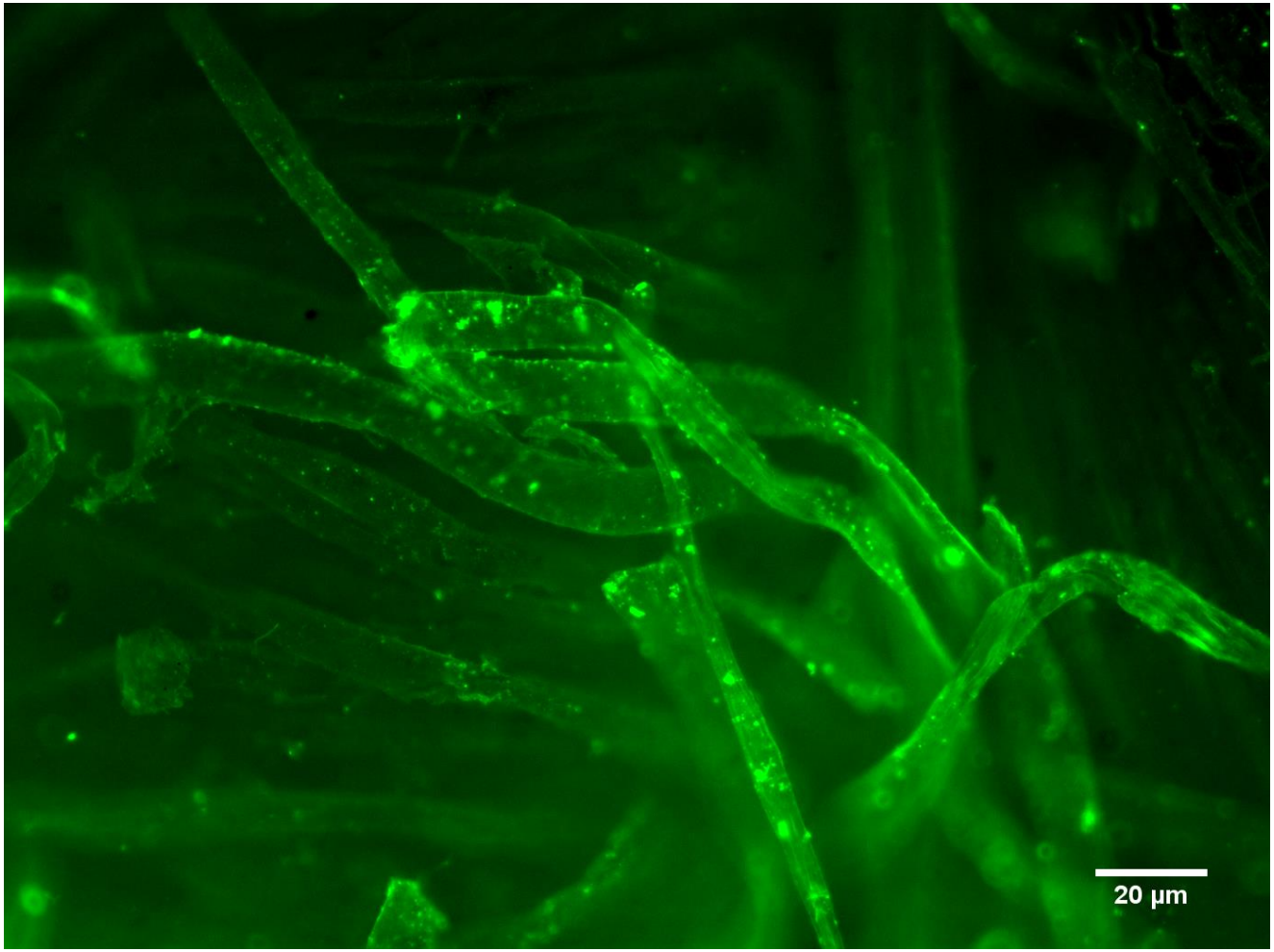


TEP 0.05% observé sans rinçage x20





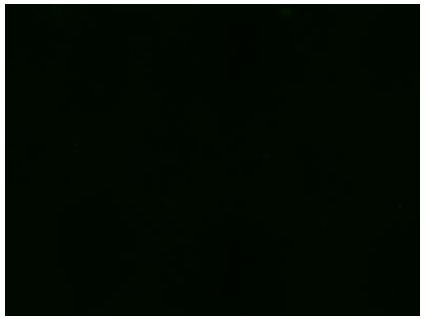
TEP 0.05% observé sans rinçage x40



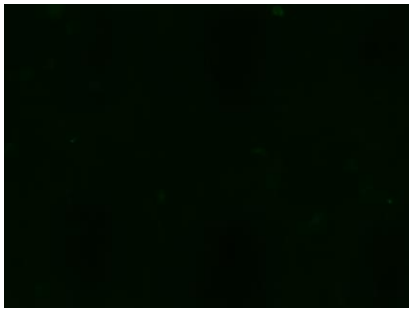
04-05/06/2019

- TEP concentré à 0.02 – 0.05 – 0.1 – 0.2 – 0.5 – 1 g/L
- Préparé le 04 et le 05/06 2019
- Echantillon analysé au microscope fluo, x10, gain1 et lampe intensité 1 avec des temps d'exposition de 10 a 4000 ms
- Coton rincé 20s dans milliq water, ou non rincé. Posé sur la lamelle avec 40µL de milliq water.

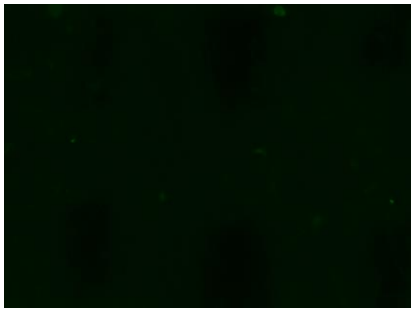
10ms



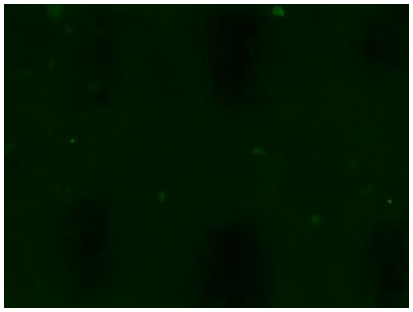
20 ms



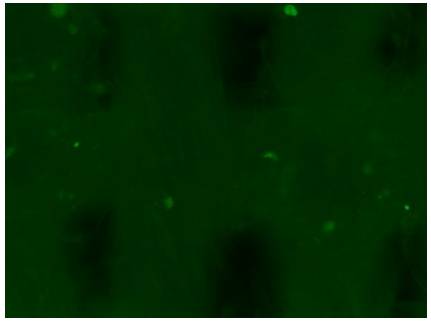
30 ms



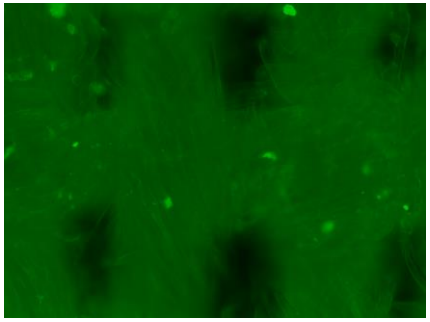
50 ms



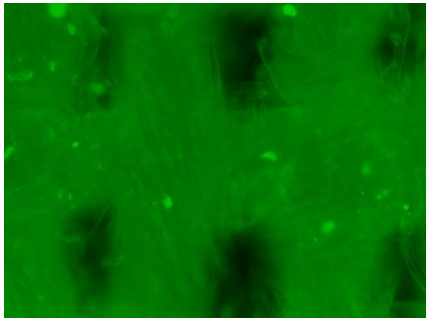
100 ms



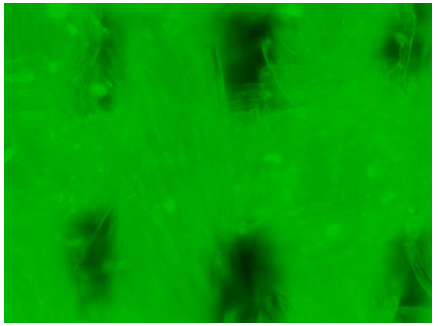
200 ms



300 ms



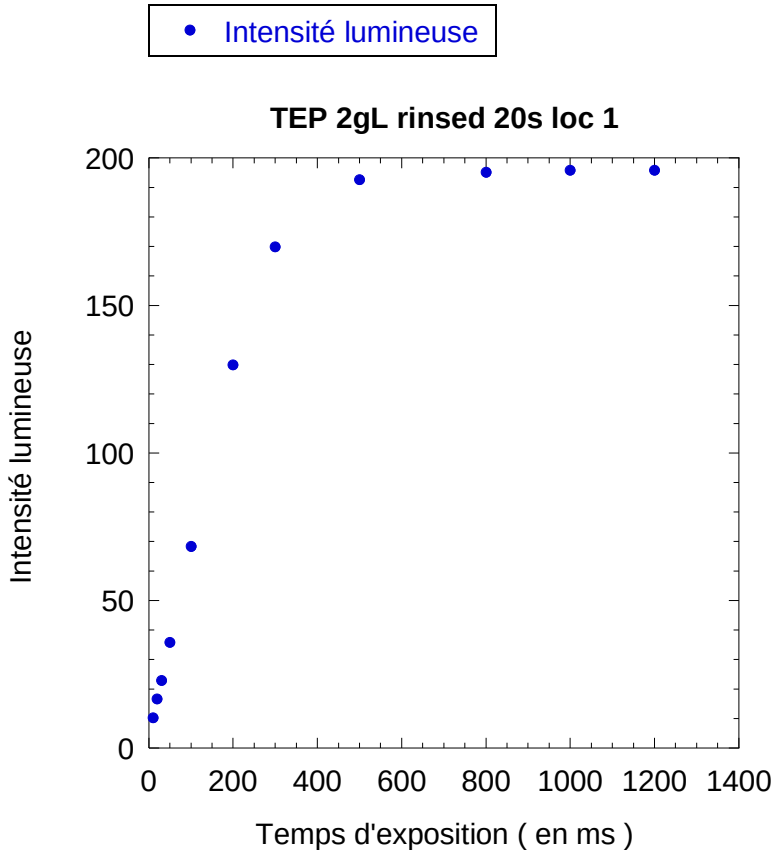
500 ms

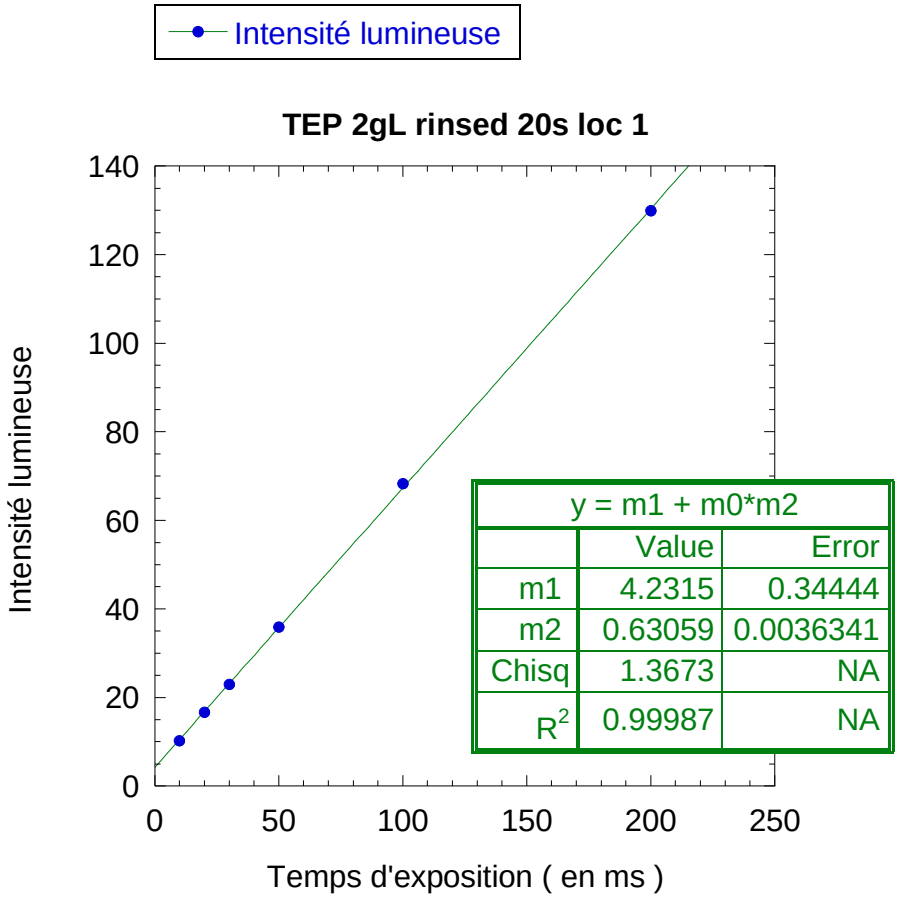


800 ms

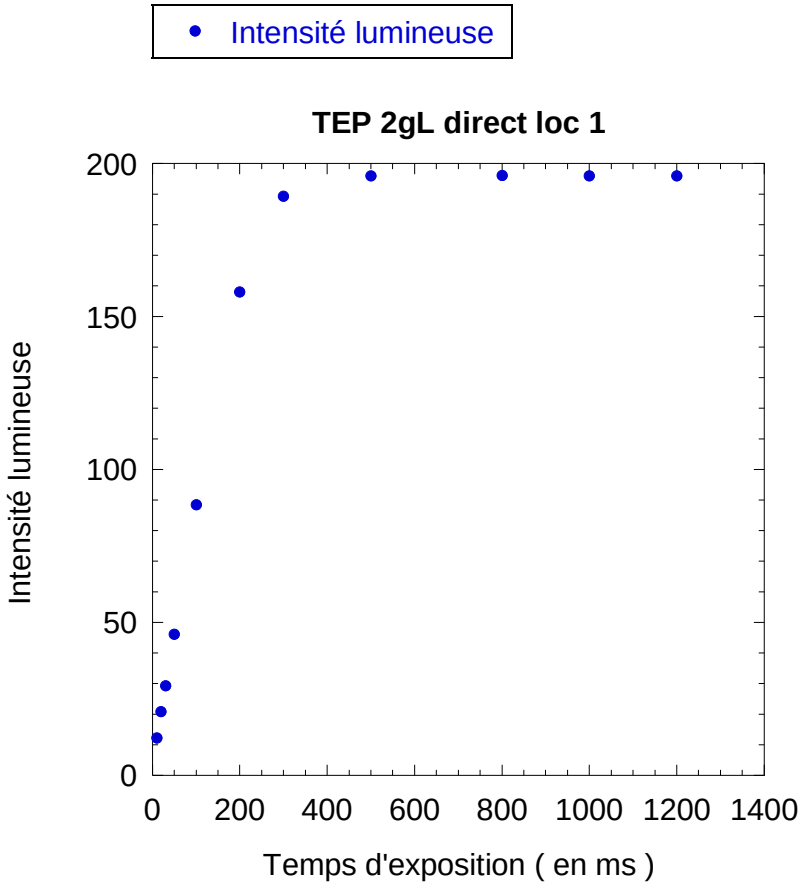
1000 ms

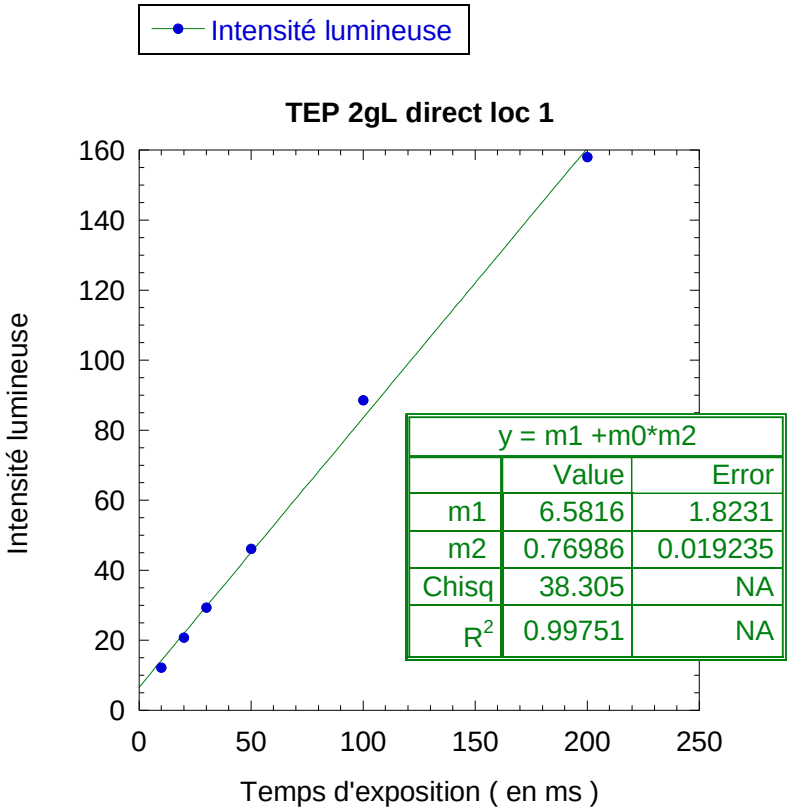
TEP 2g/L rincé 20s



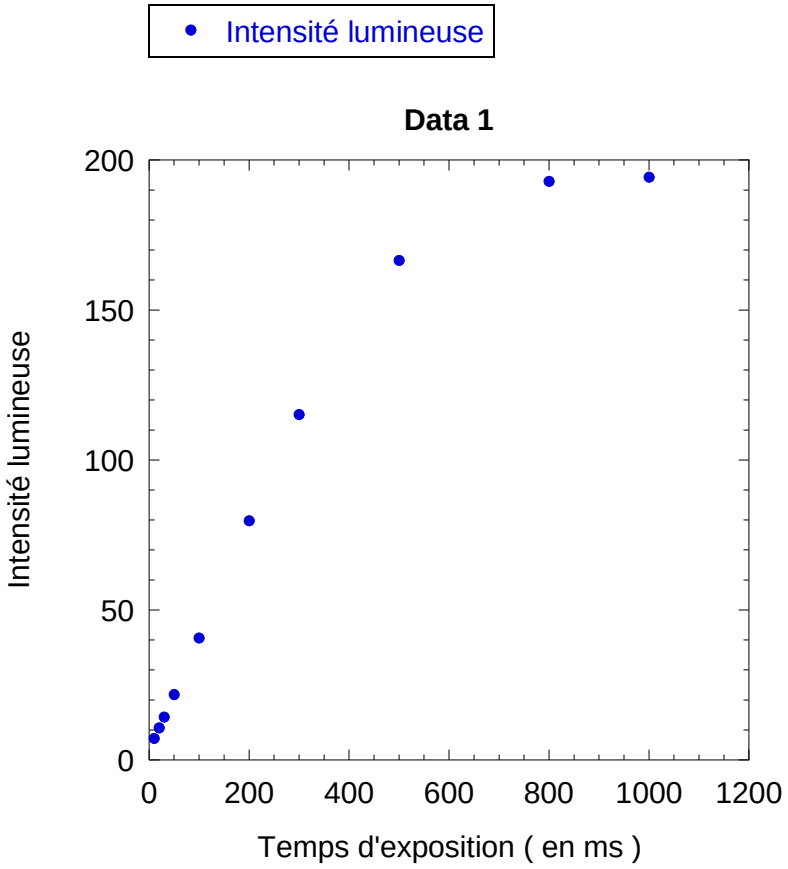


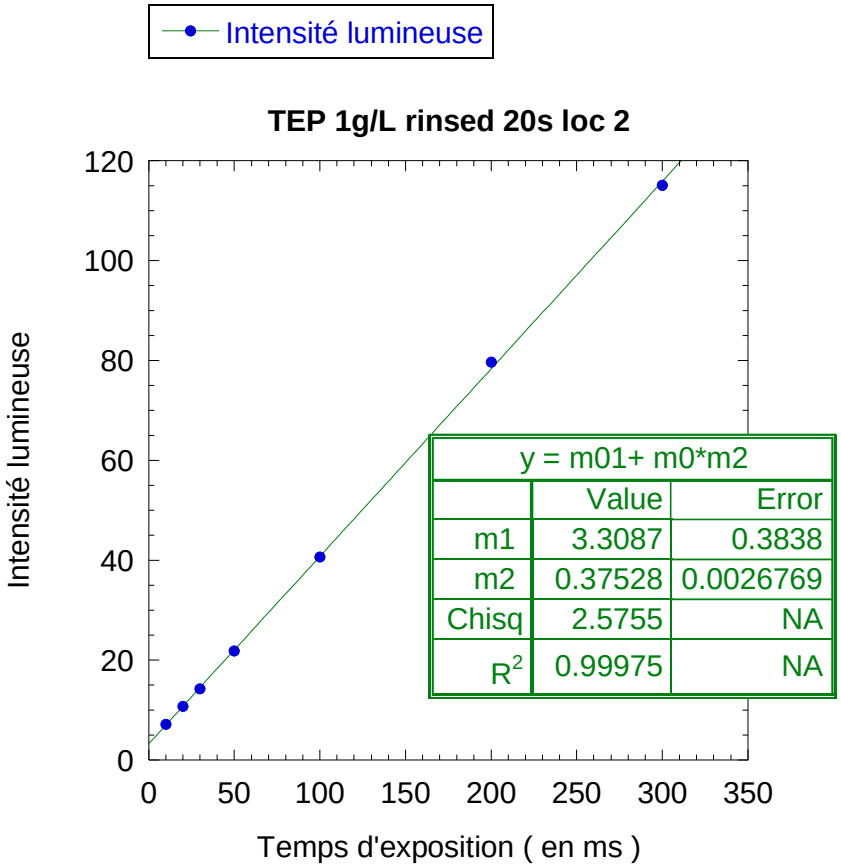
TEP 2g/L direct



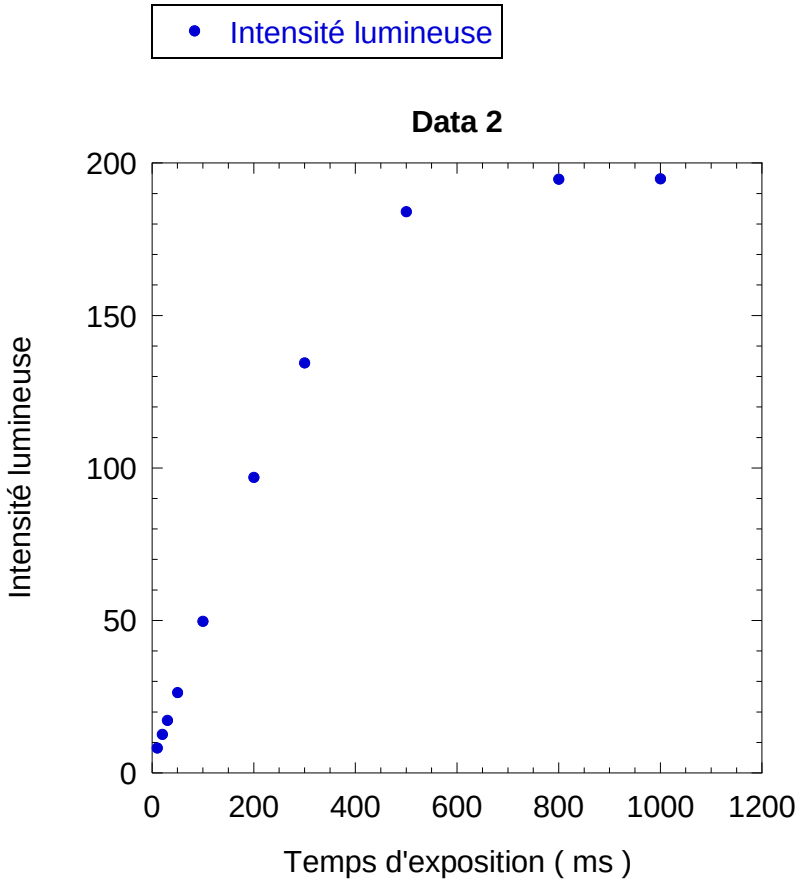


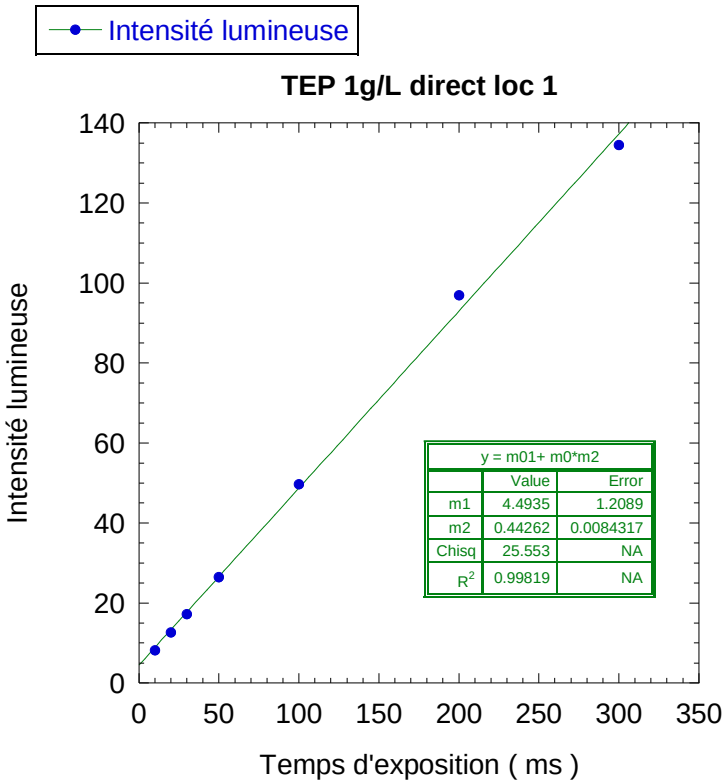
TEP 1g/L rincé 20s



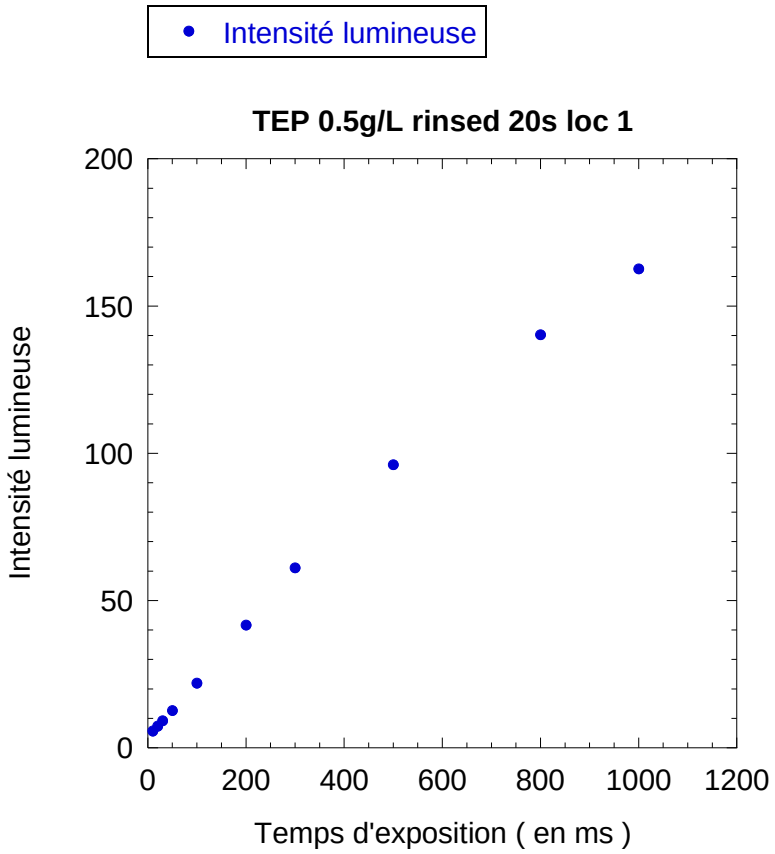


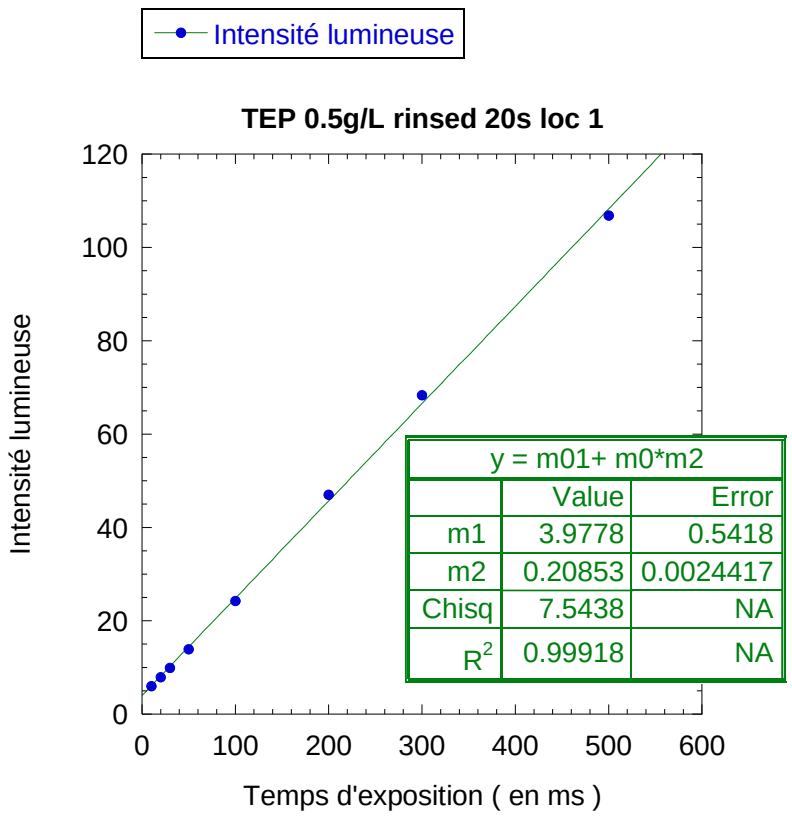
TEP 1g/L direct



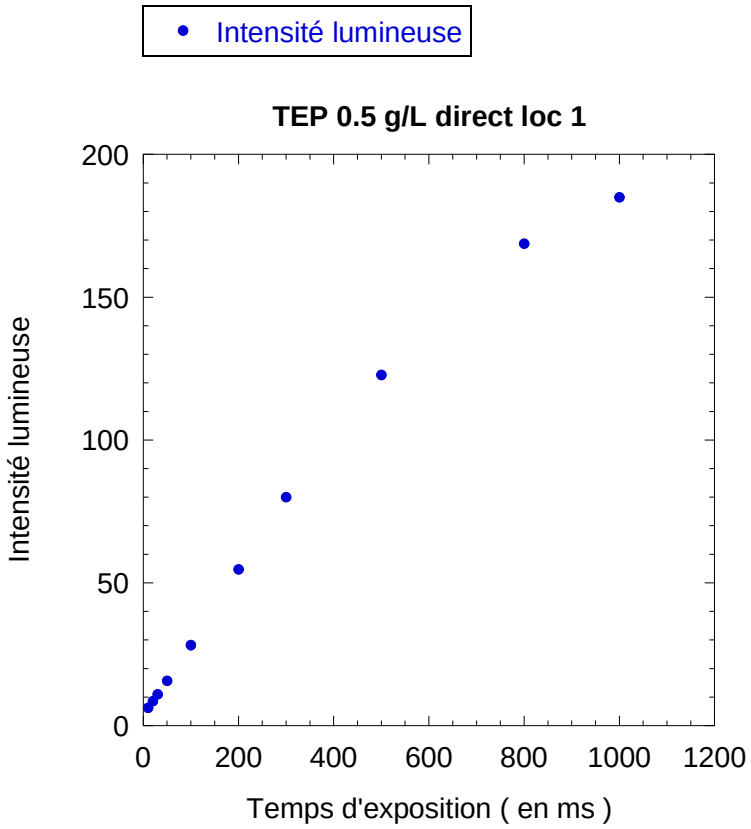


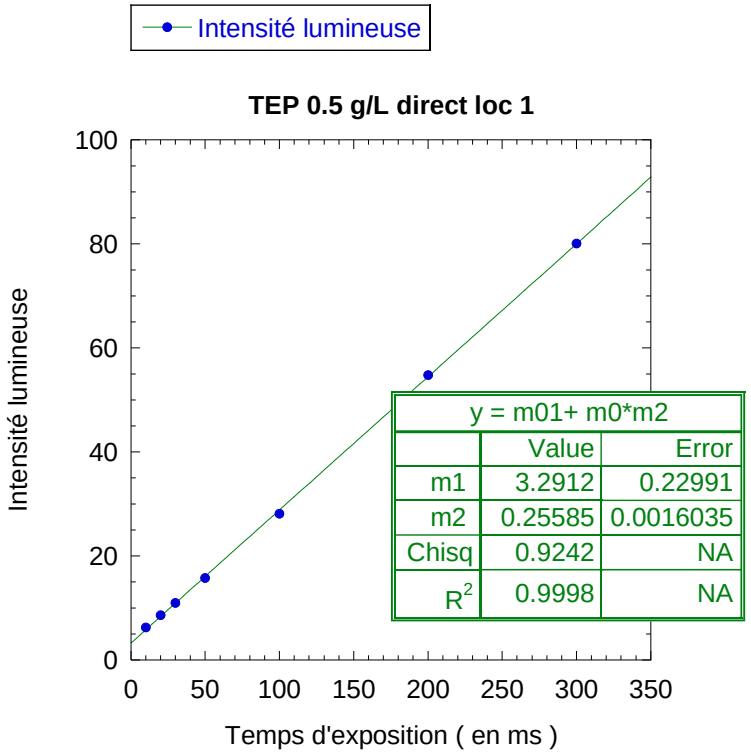
TEP 0.5 g/L rincé 20s



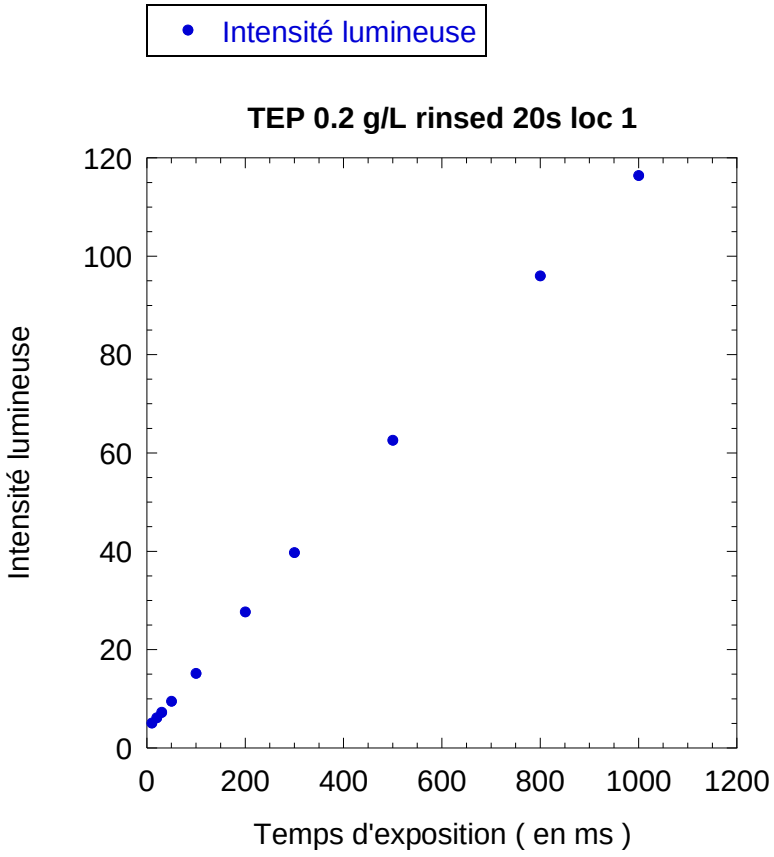


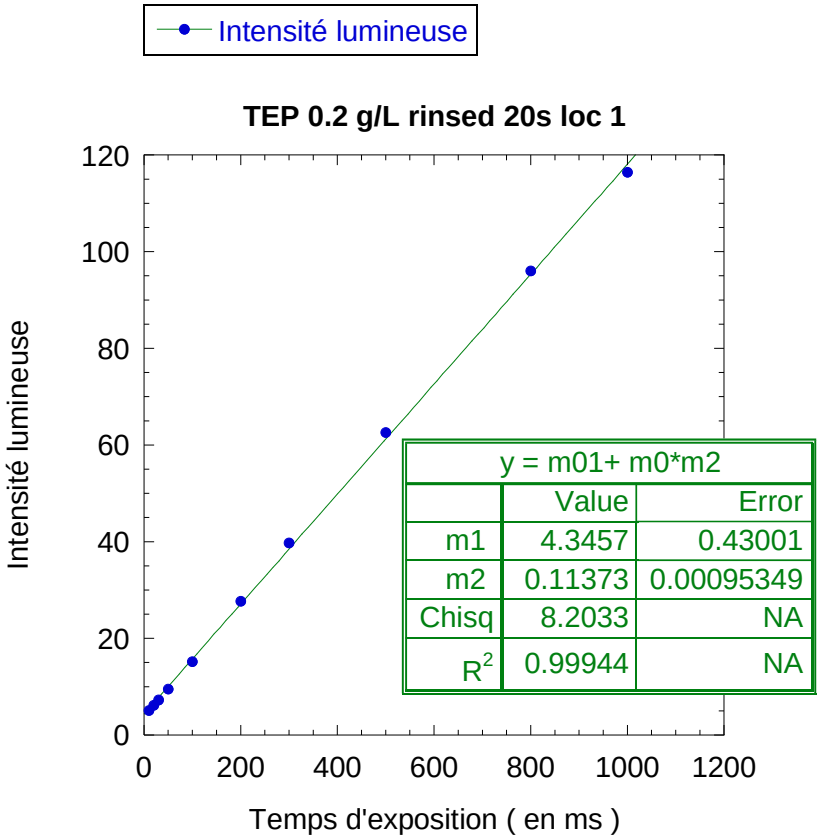
TEP 0.5 g/L direct



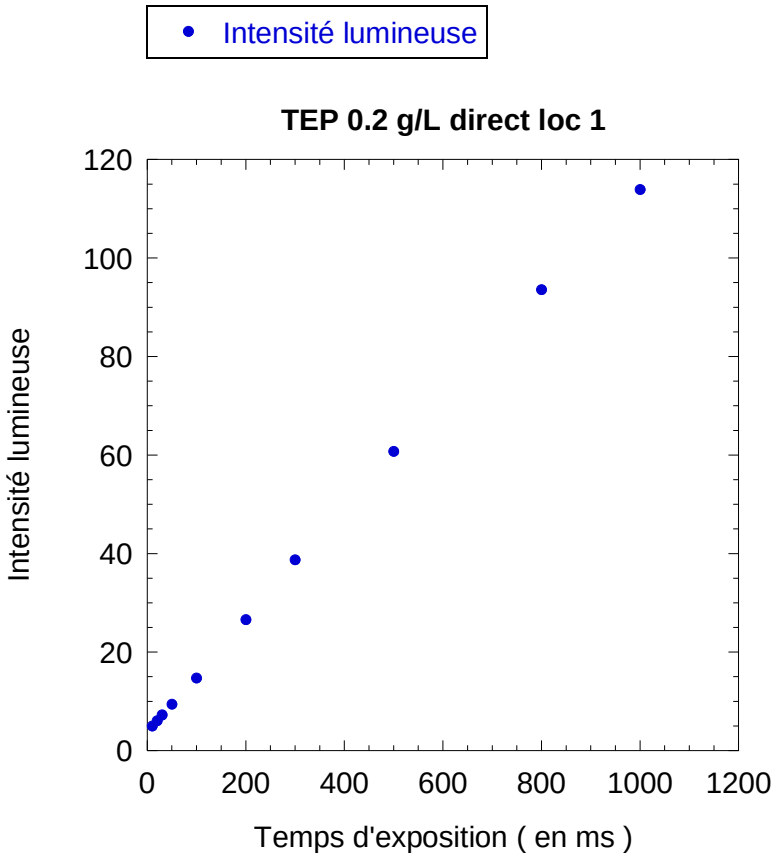


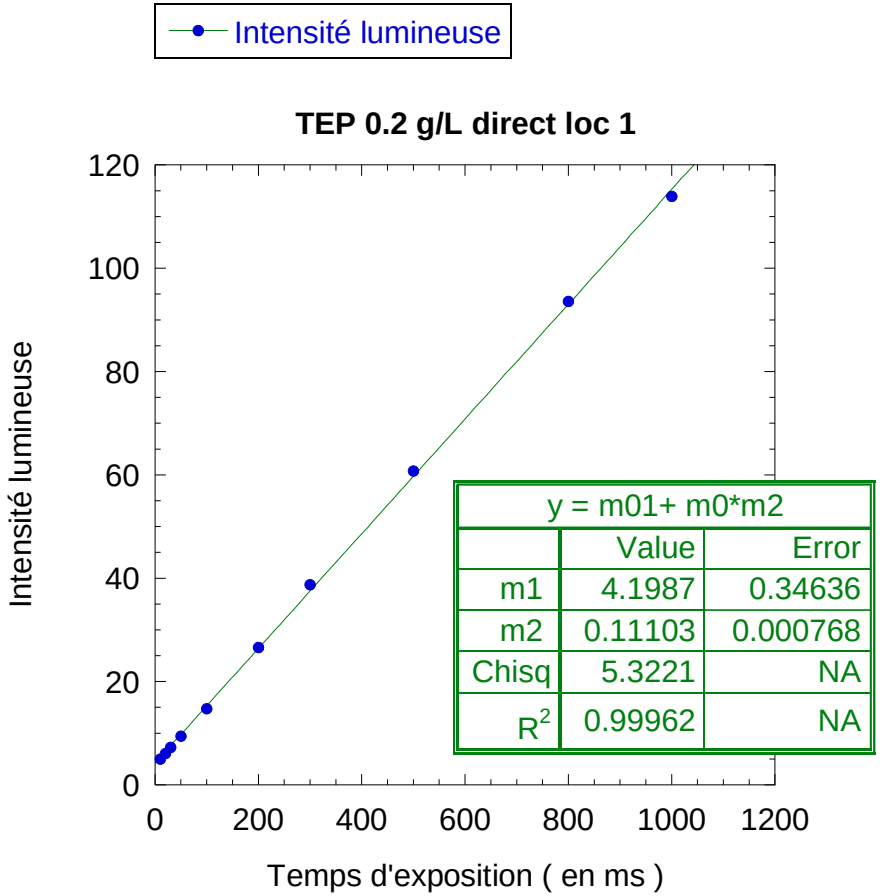
TEP 0.2 g/L rincé 20s



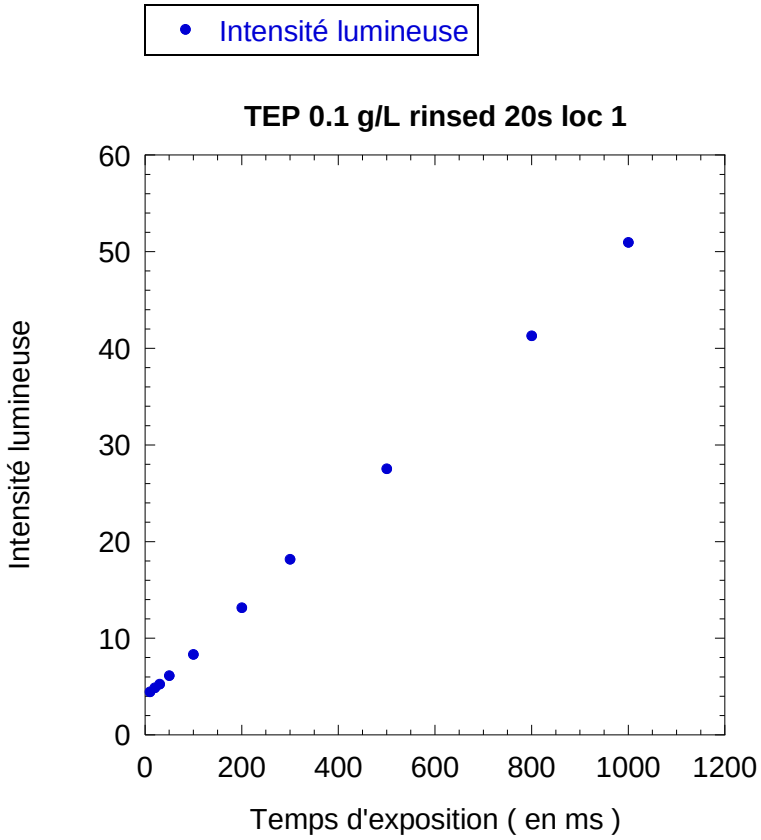


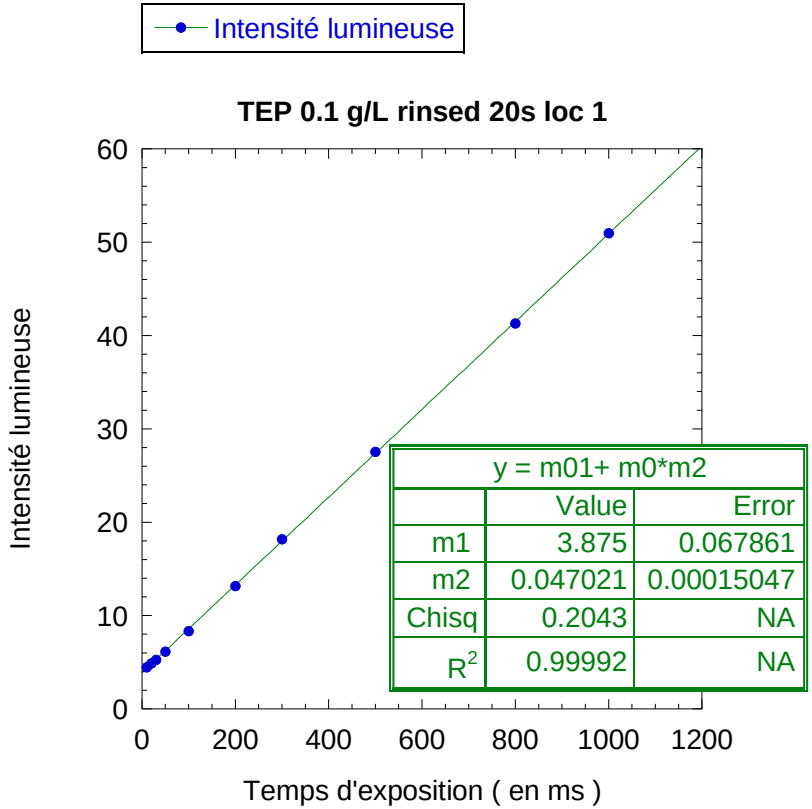
TEP 0.2 g/L direct



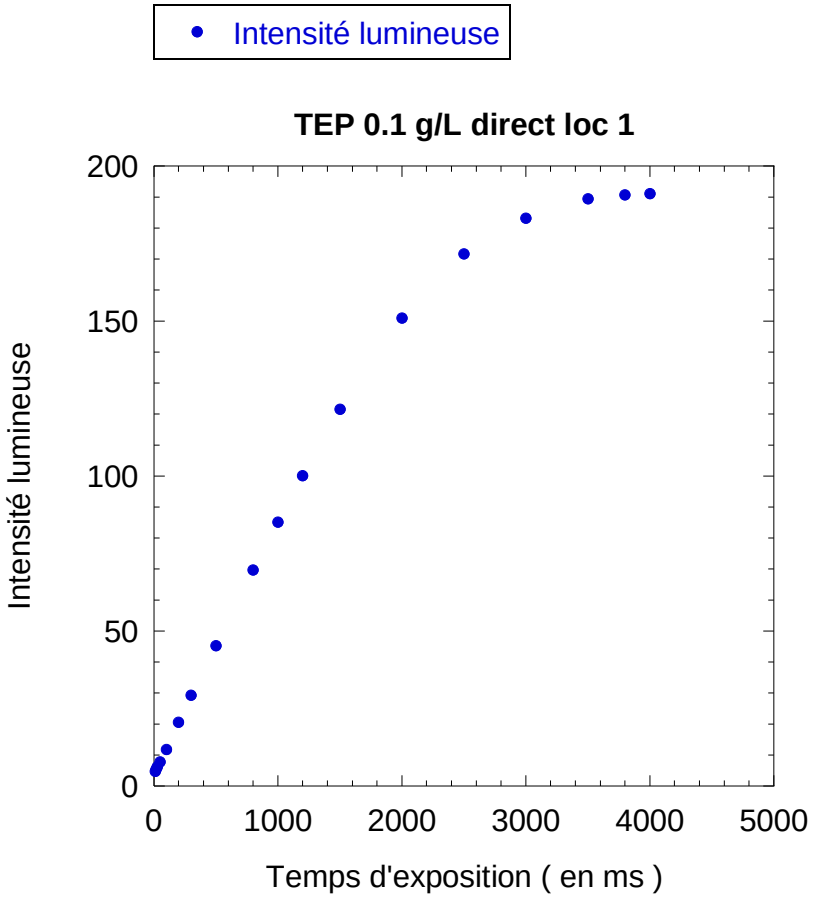


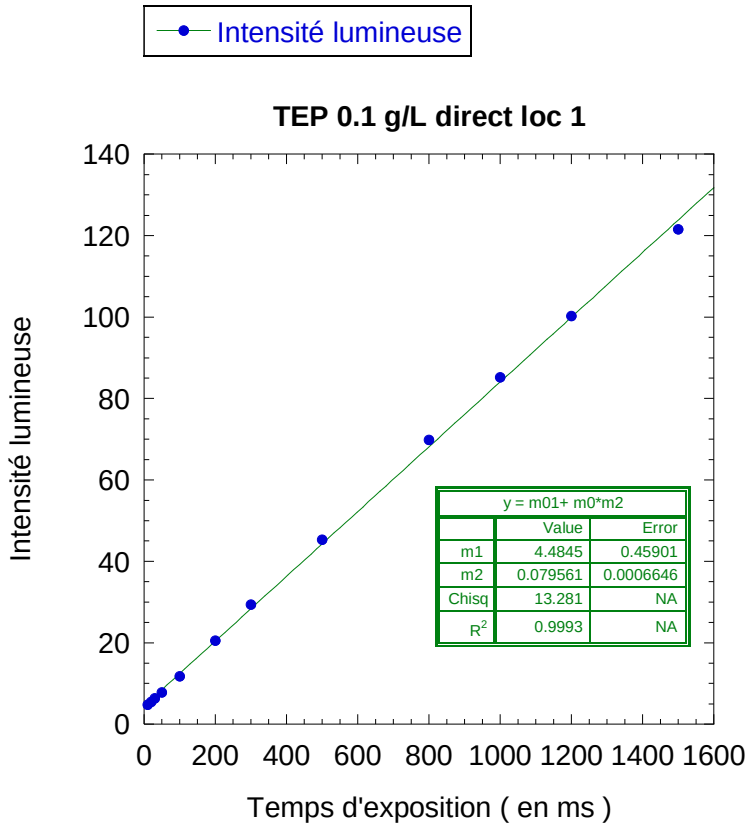
TEP 0.1 g/L rincé 20s



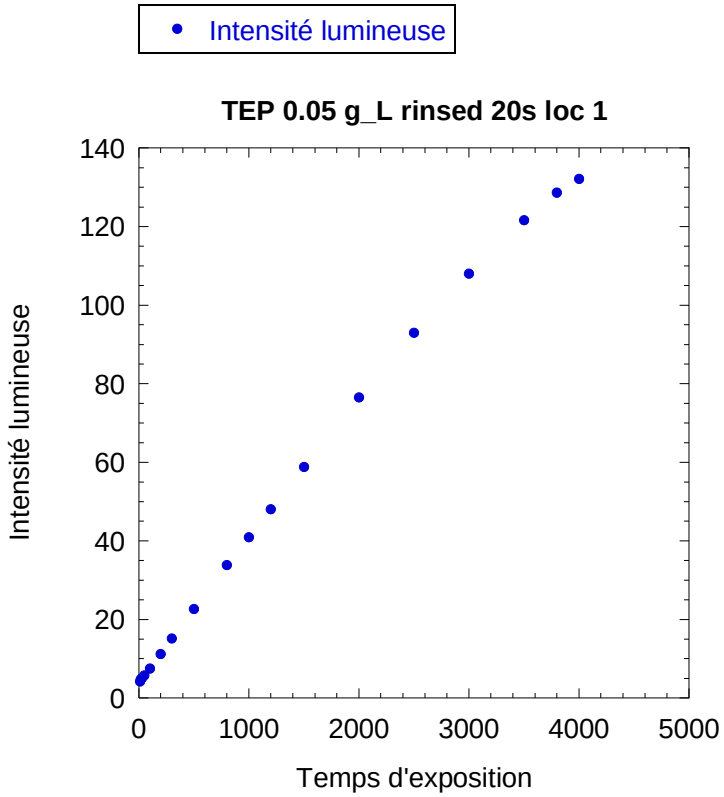


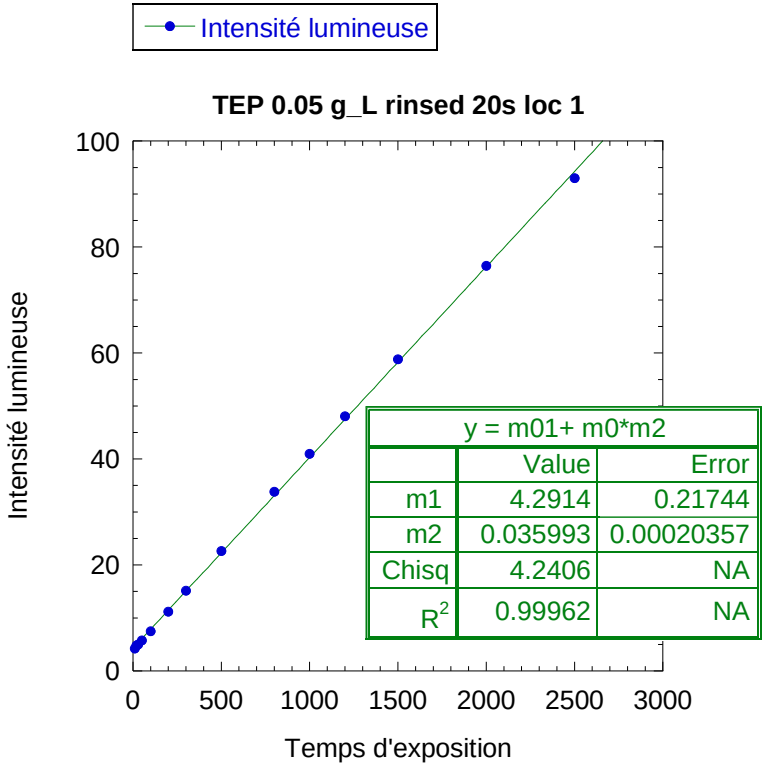
TEP 0.1g/L direct



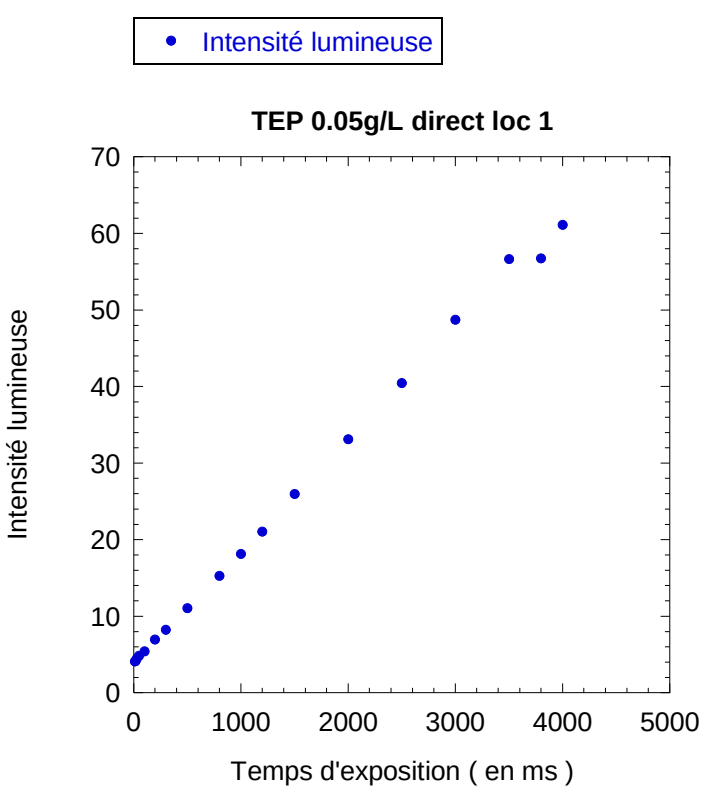


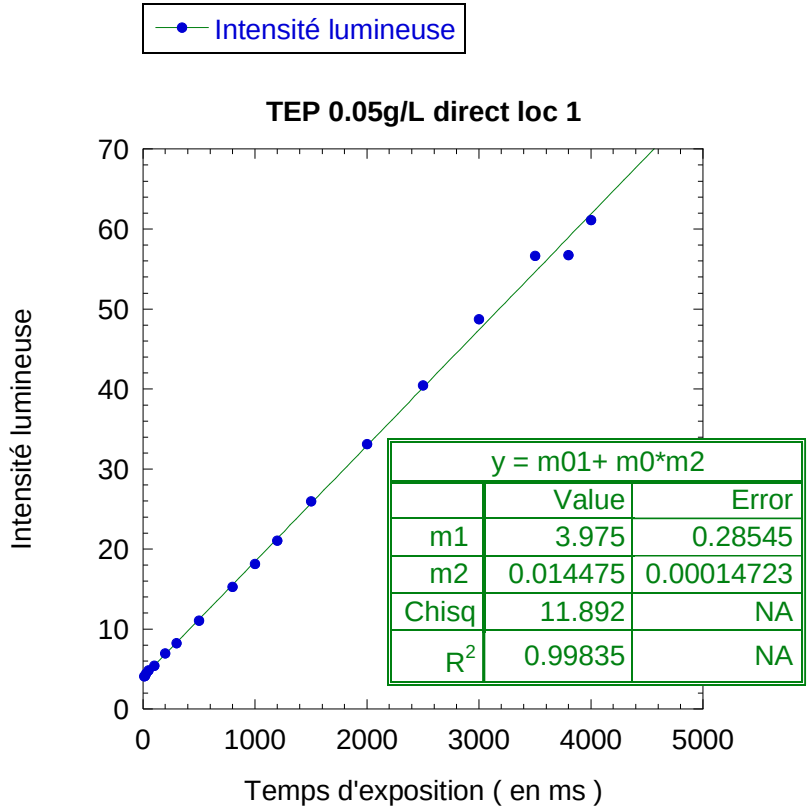
TEP 0.05 g/L rincé 20s



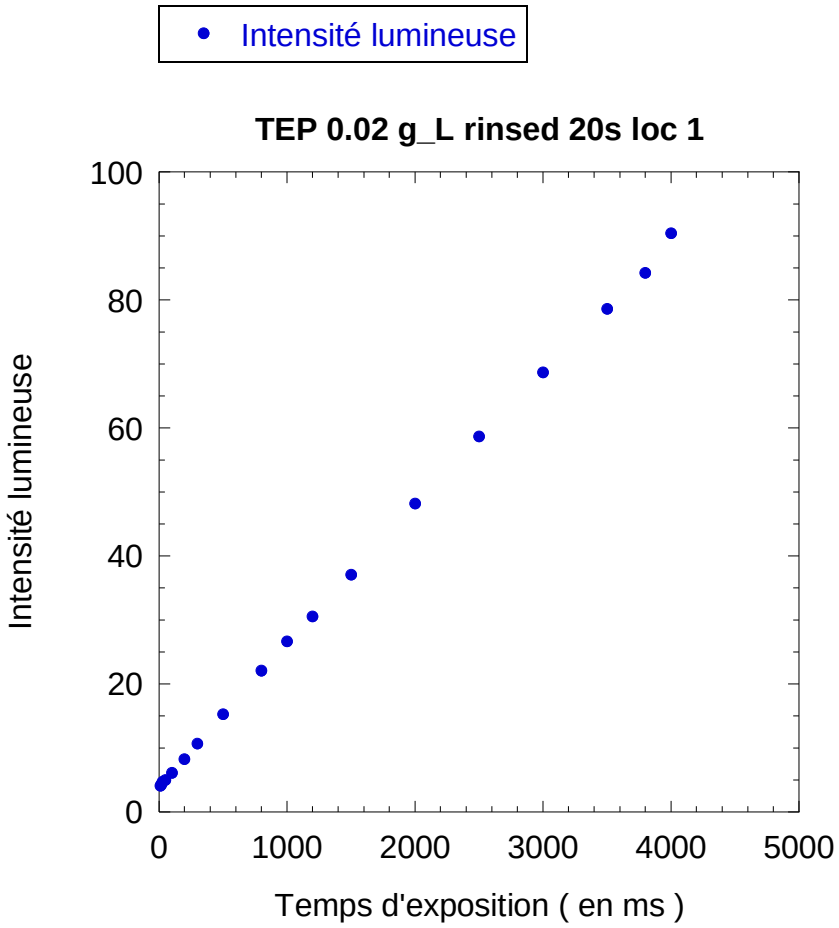


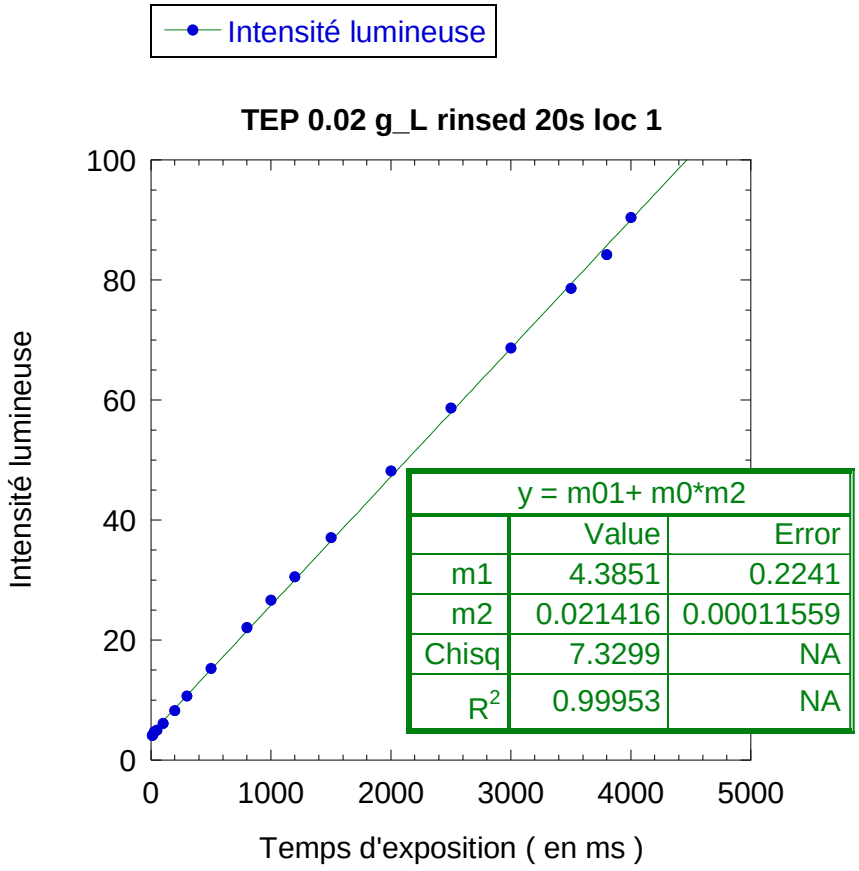
TEP 0.05 g/L direct



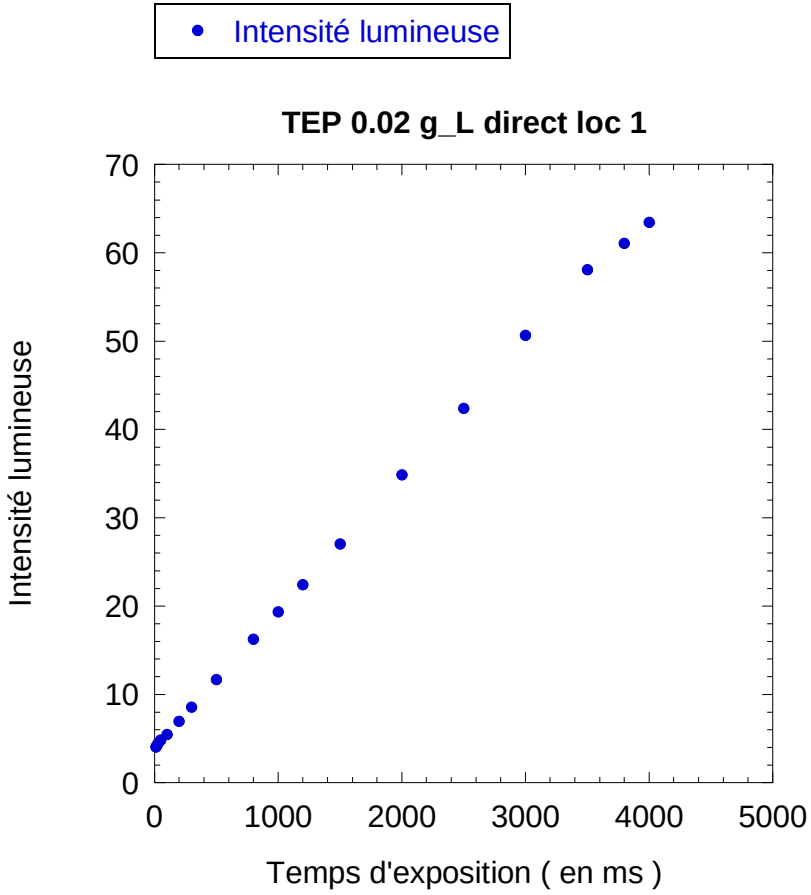


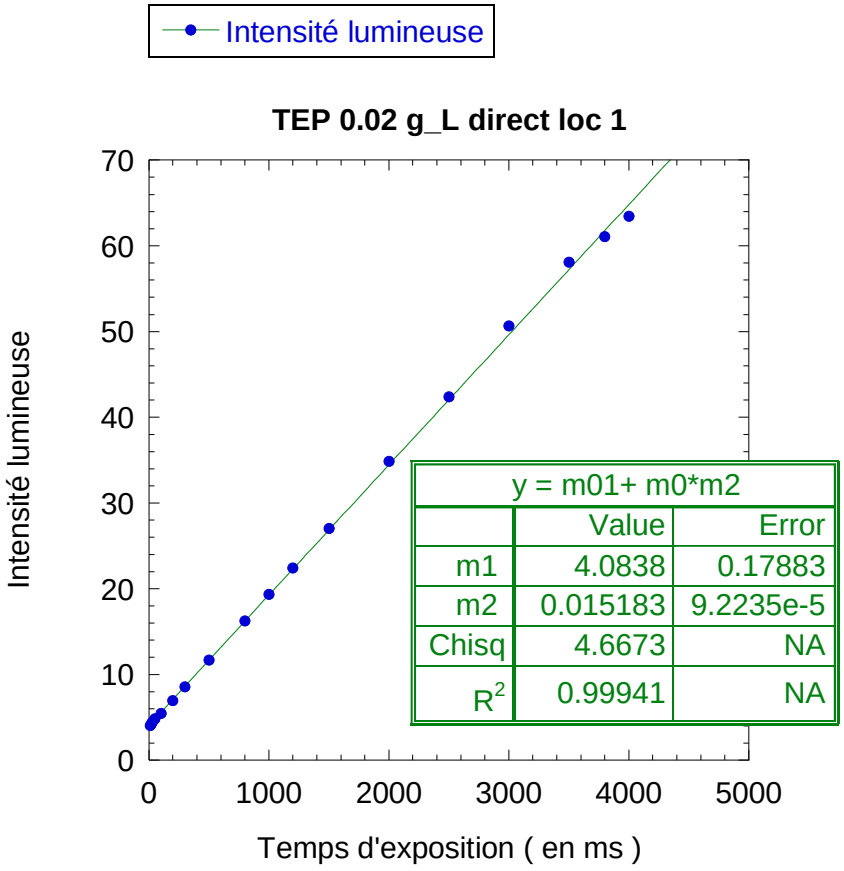
TEP 0.02 g/L rincé 20s



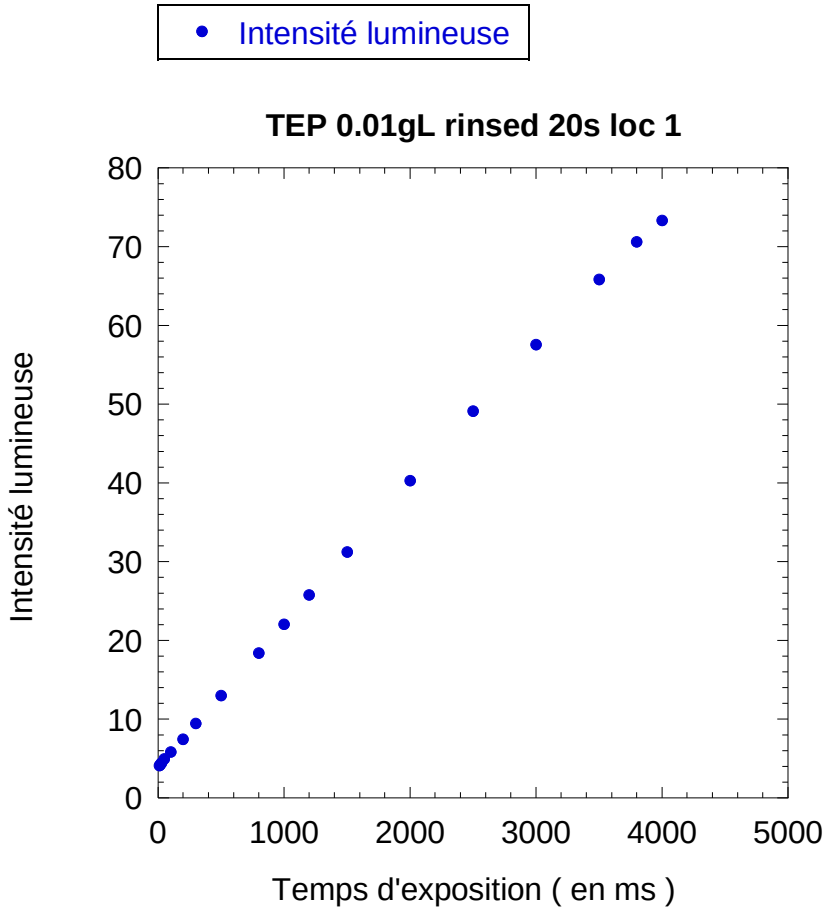


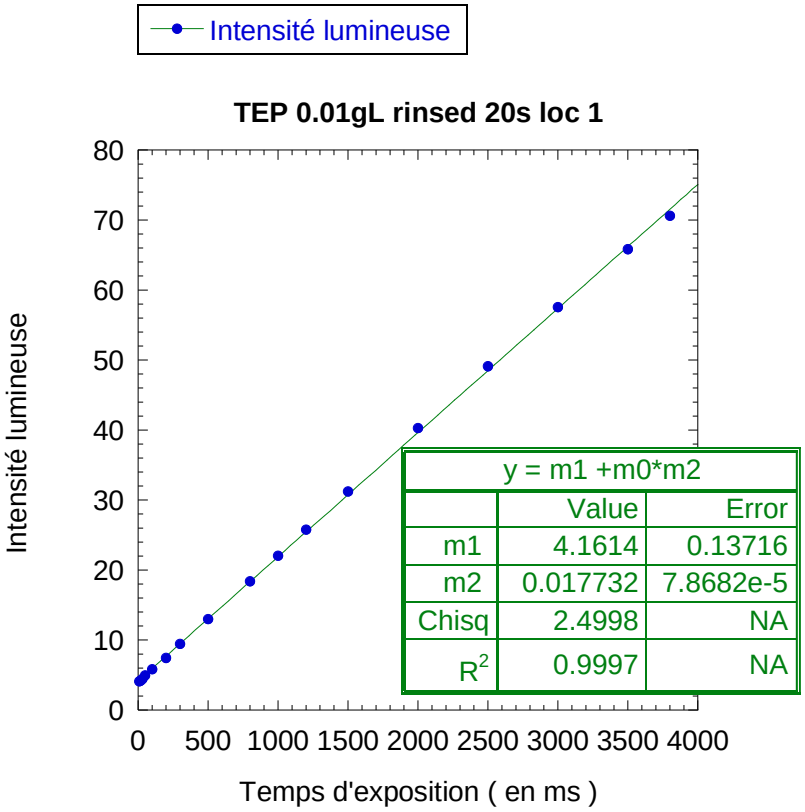
TEP 0.02 g/L direct



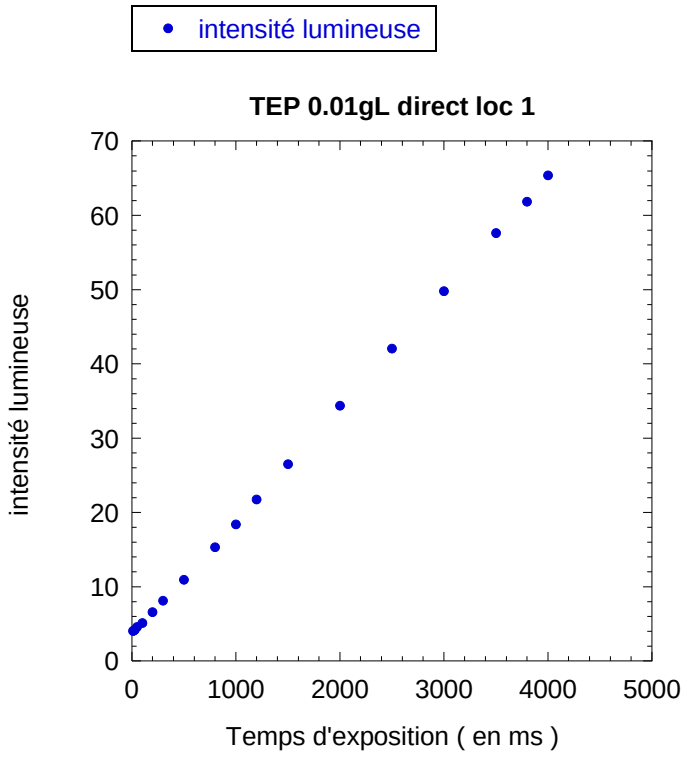


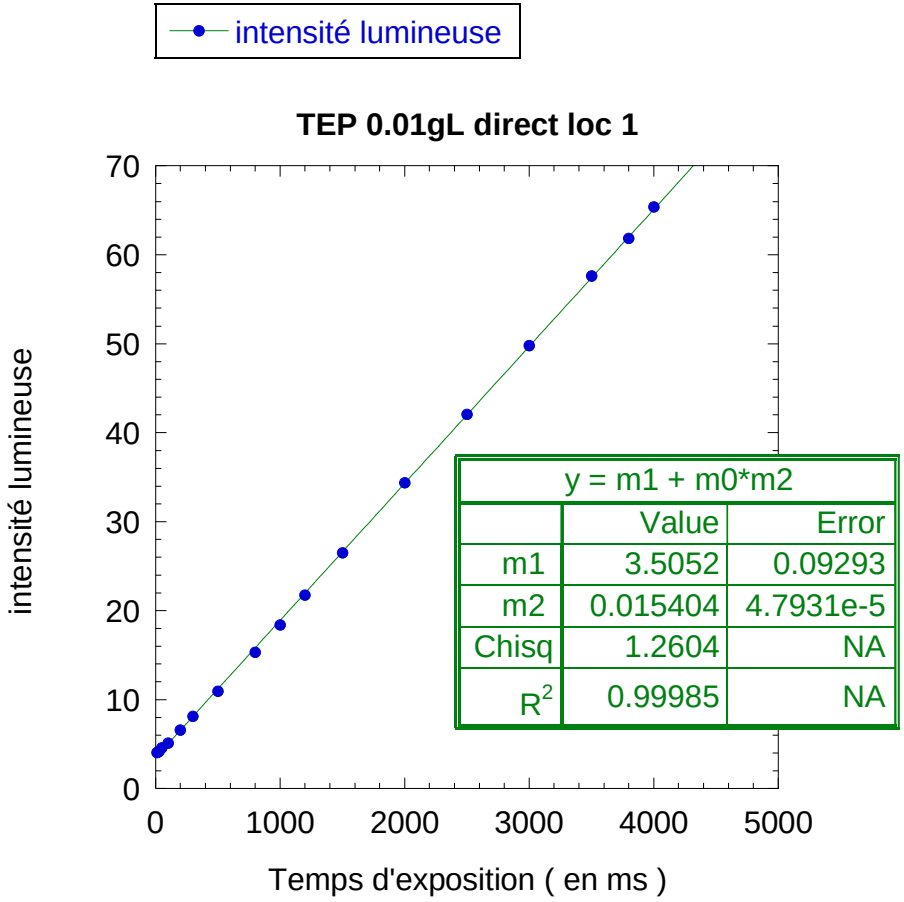
TEP 0.01g/L rincé 20s

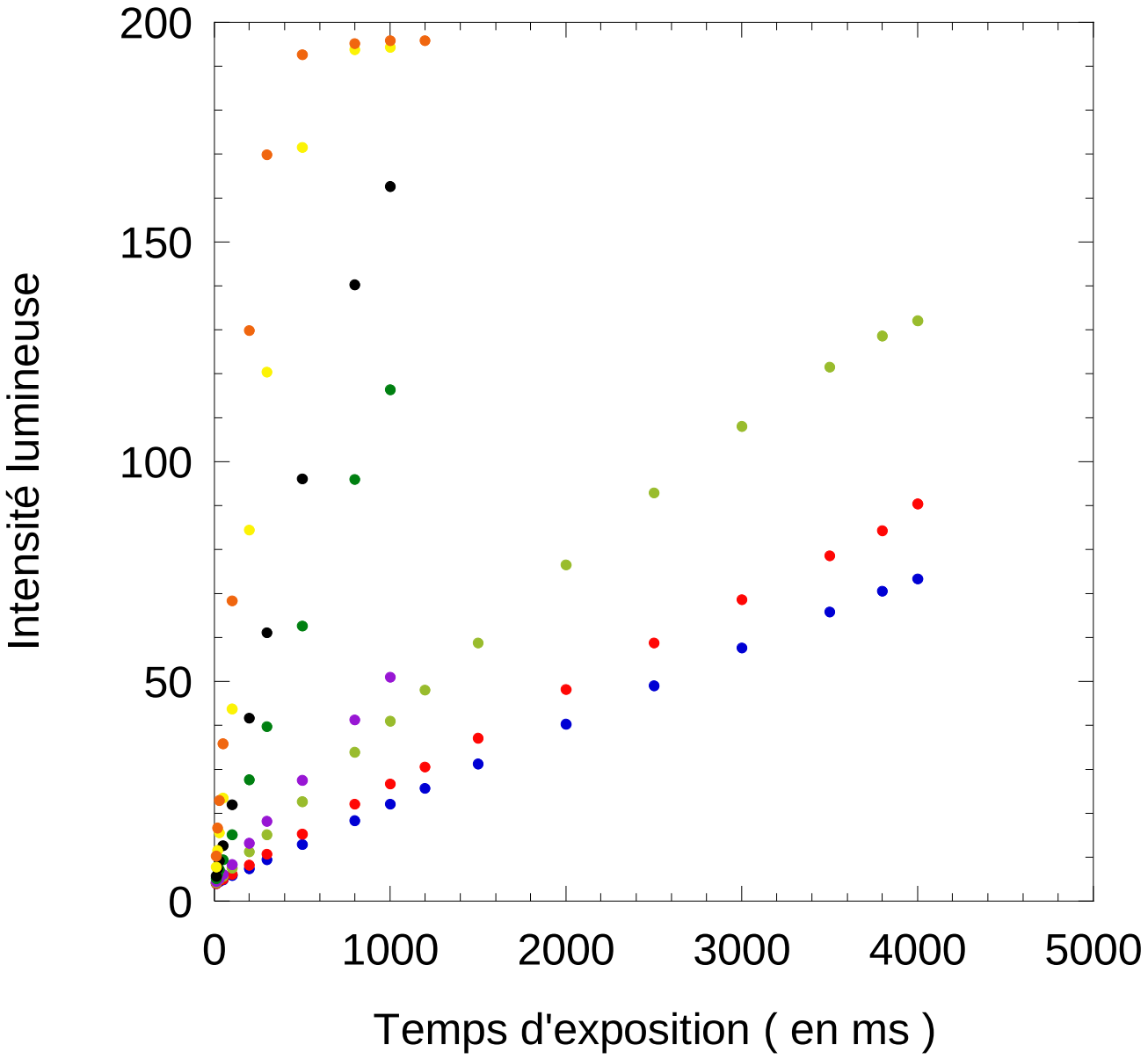




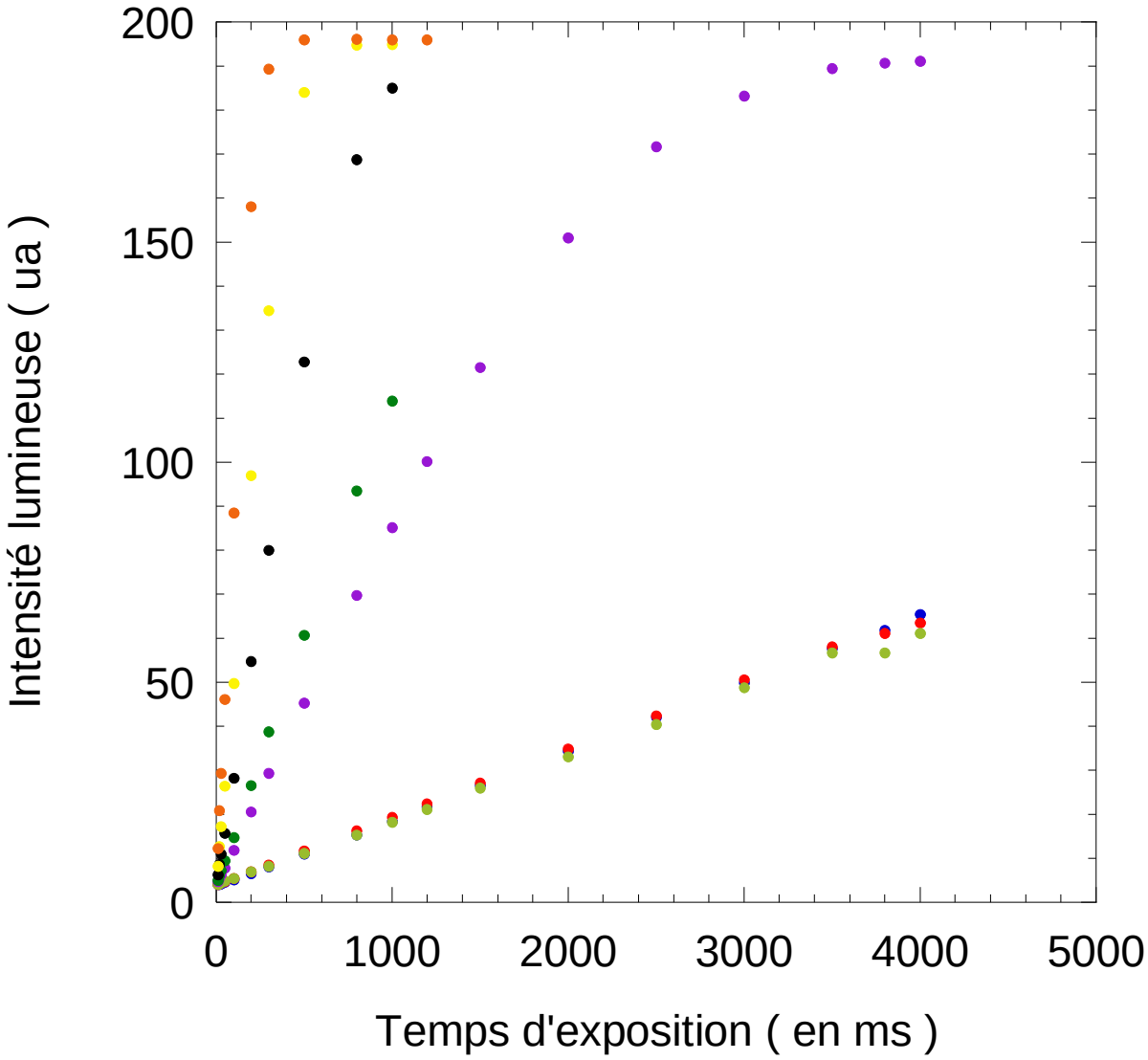
TEP 0.01g/L direct






200
150
100
50
0
Intensité lumineuse
0
1000
2000
3000
4000
5000
Temps d'exposition (en ms)

tous les plots direct

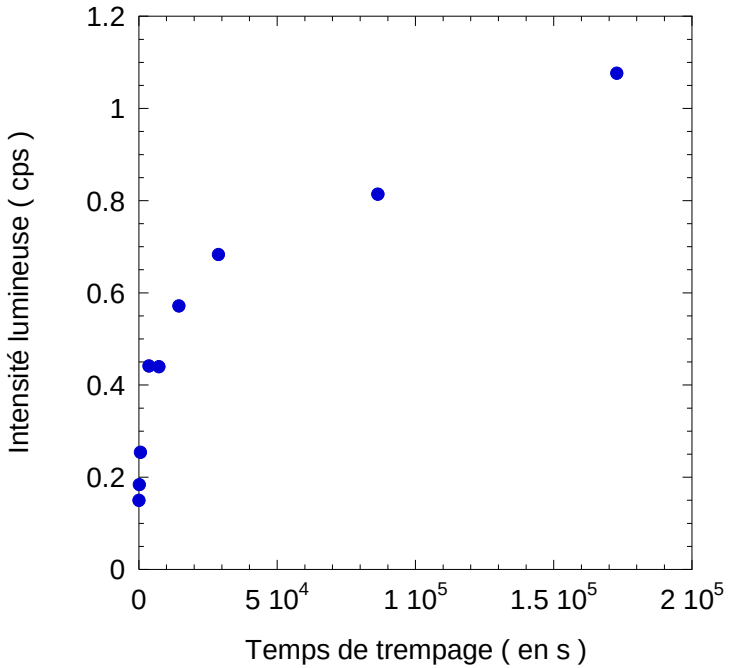


Cinétique TEP 0,05g/L et 0,5g/L

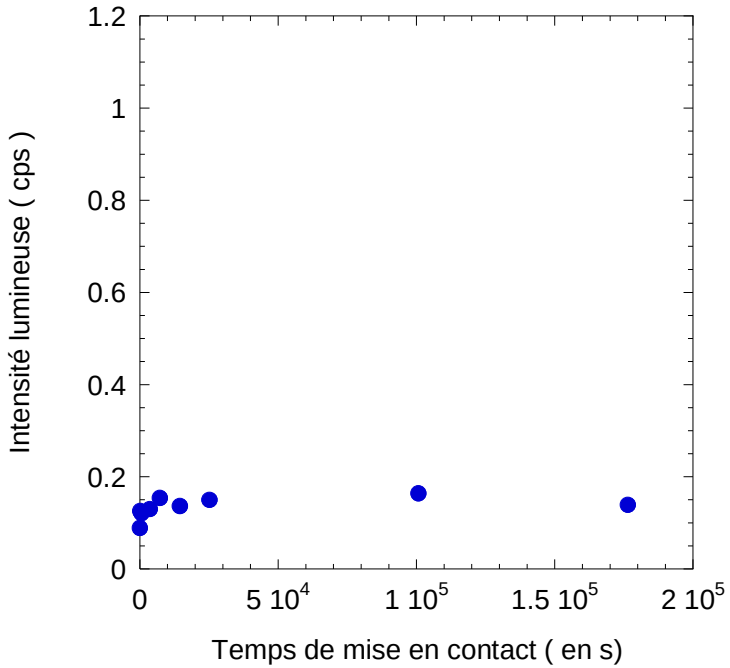
- 0,03g de coton dans 3mL TEP à 0,05g/L ou 0,5g/L pendant plusieurs temps
- Rincé 20s dans milliq water
- Microscopie de fluorescence x10 intensité 1 gain 1 sur lamelle avec 40µL de milliQ water

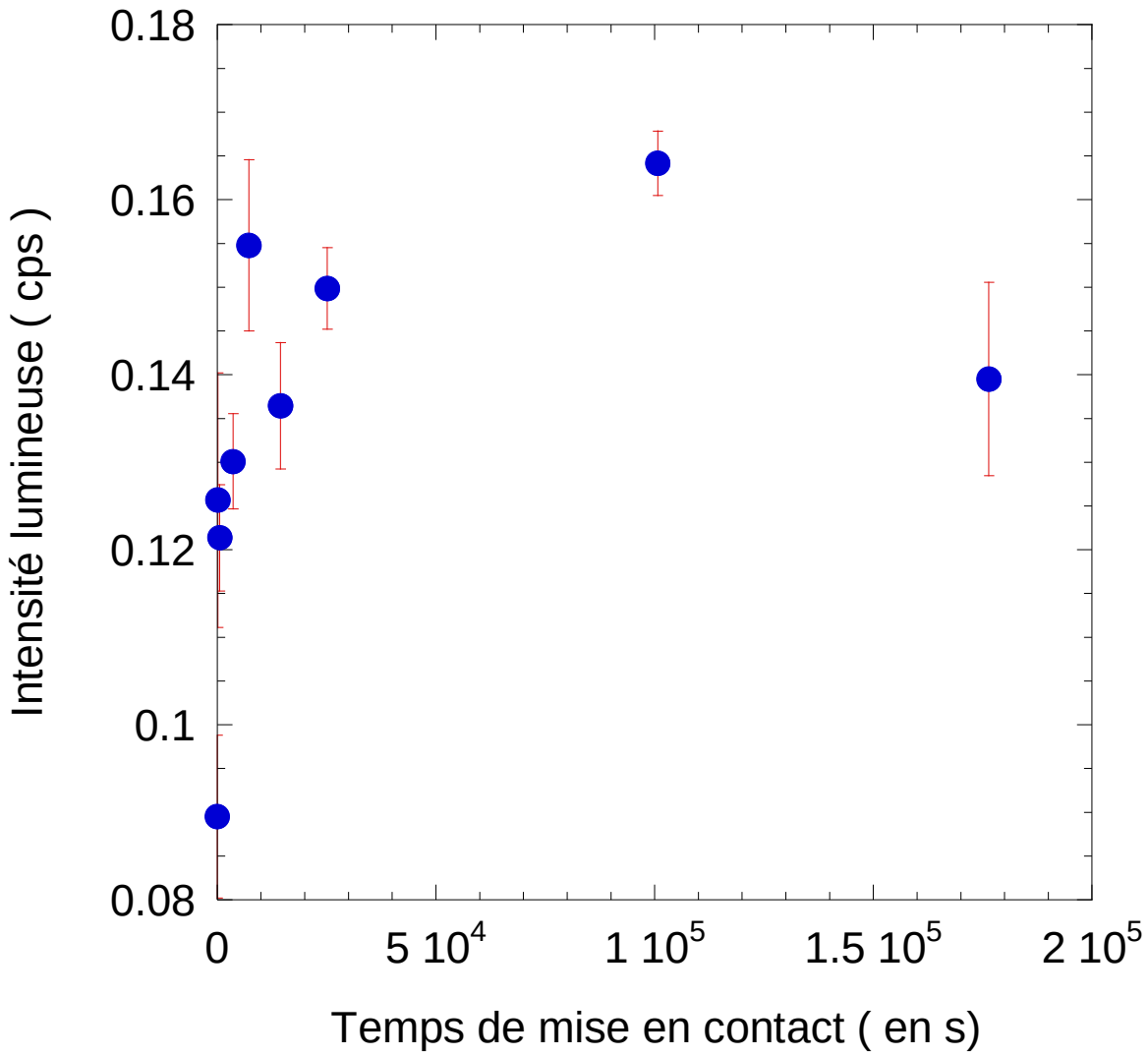
Comparaison cinétique TEP 0,05 et 0,5g/L

TEP 0,5g/L



TEP 0,05g/L



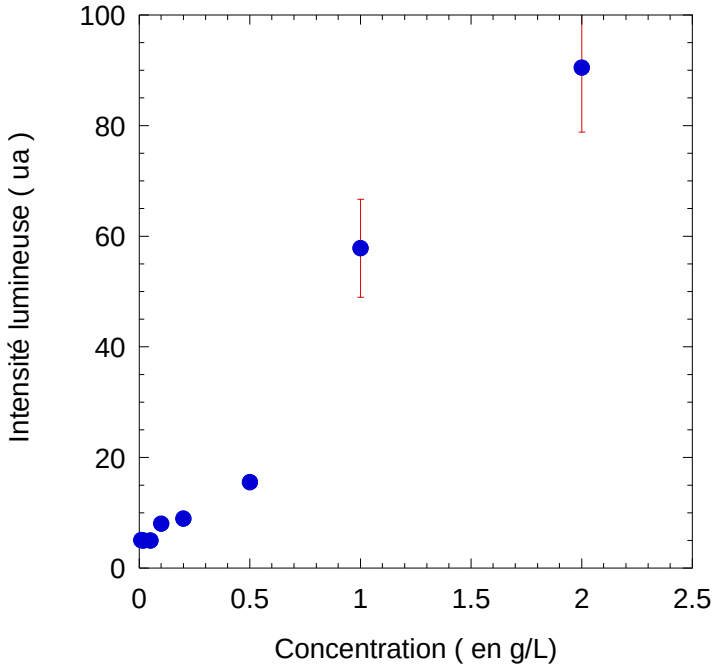

0.18
0.16
0.14
0.12
0.1
0.08
Intensité lumineuse (cps)
0
5 10^4
1 10^5
1.5 10^5
2 10^5
Temps de mise en contact (en s)

Analyse échantillons séchés

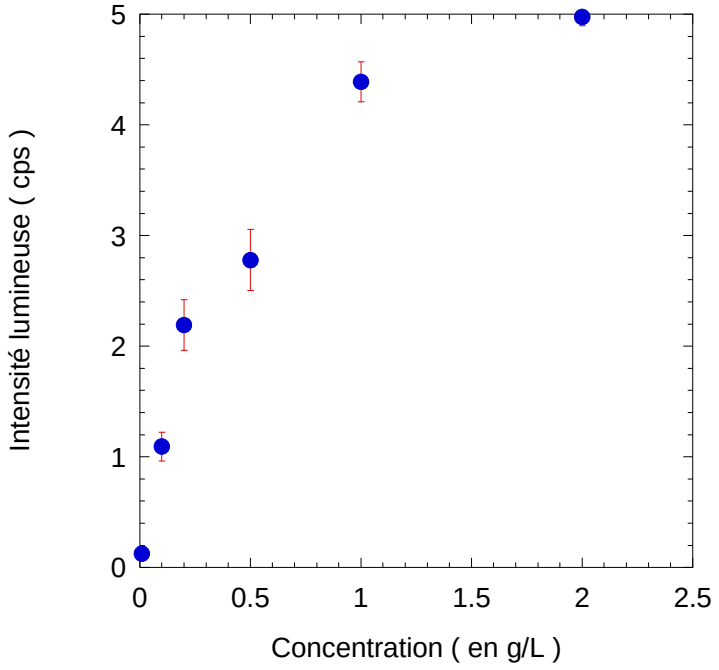
- 0,03g de coton trempé dans TEP et ES concentrés entre 0,01 et 2g/L mis à sécher.
- Rinçage 20s
- Observation sur lamelles sans eau
- Microscopie x10 intensité 1 gain 1

Comparaison ES et TEP séché

TEP rincé 20s séché

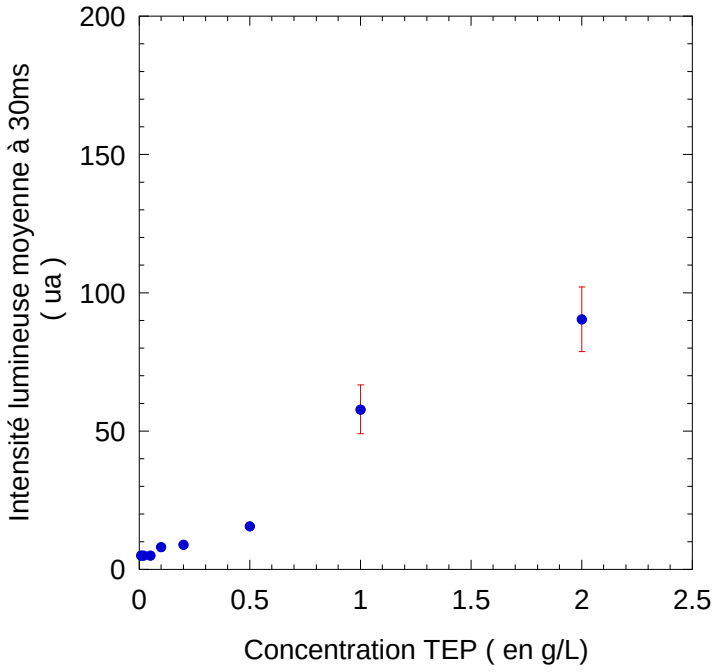


ES rincé 20s séché

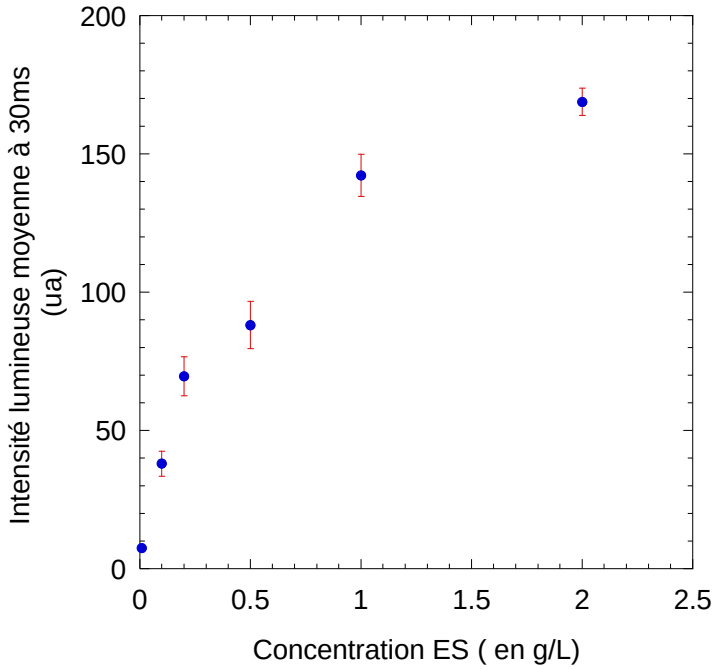


Comparaison à 30ms ES et TEP

TEP rincé 20s séché intensité à 30ms



ES rincé 20s séché intensité à 30ms



DEEDMAC 28/06/19

- Conditions expérimentales:
  - DEEDMAC concentré de 0,02 à 1g/L.
  - Echantillon 0,03g coton trempé 10min dans la dispersion
  - Soit rinçage 20s dans MilliQ Water, soit sans rinçage
  - Analyse au microscope fluo x10 Intensité 1 Gain 1
  - Fit avec isotherme de Langmuir

DEEDMAC rincé et non rincé