

La question du sel : Le réduire ?

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International Centre for Molecular Gastronomy

Pour des références:

herve.this@inrae.fr

Les bases du problème

1. Au début, il y a la **cuisine**... et sa généralisation
2. Le sels ? **Les sels** (gemme, fleur, autres, pex Maldon, Chypre, etc.)
3. Ses **effets** (Schweppes, café, etc.)
3. La **difficulté** de l'assaisonnement :
 - le mettre lors de la préparation : sur quelles bases ?
 - l'ajouter éventuellement ensuite : pourquoi ?

Au début la cuisine



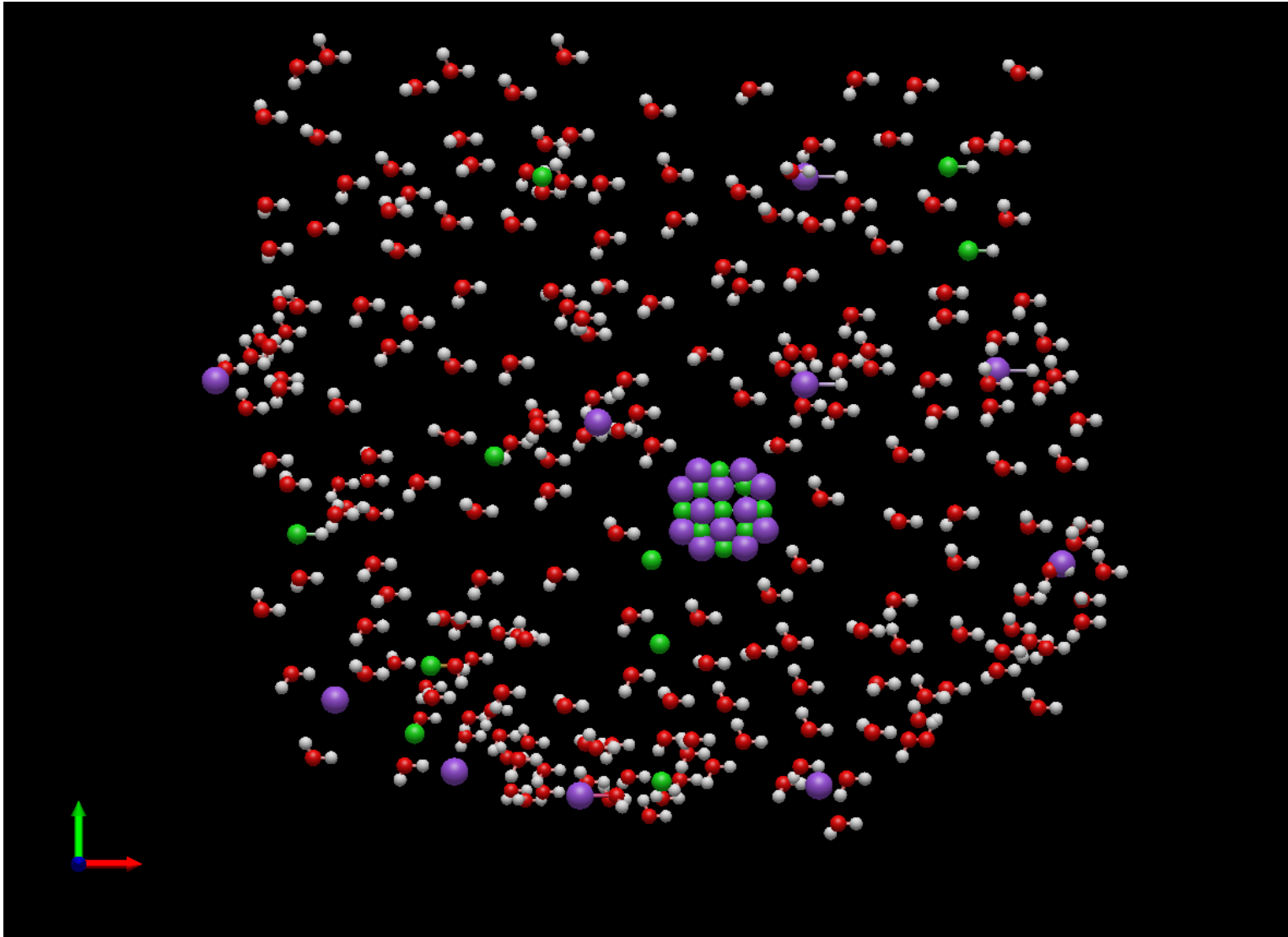
Et ses généralisations



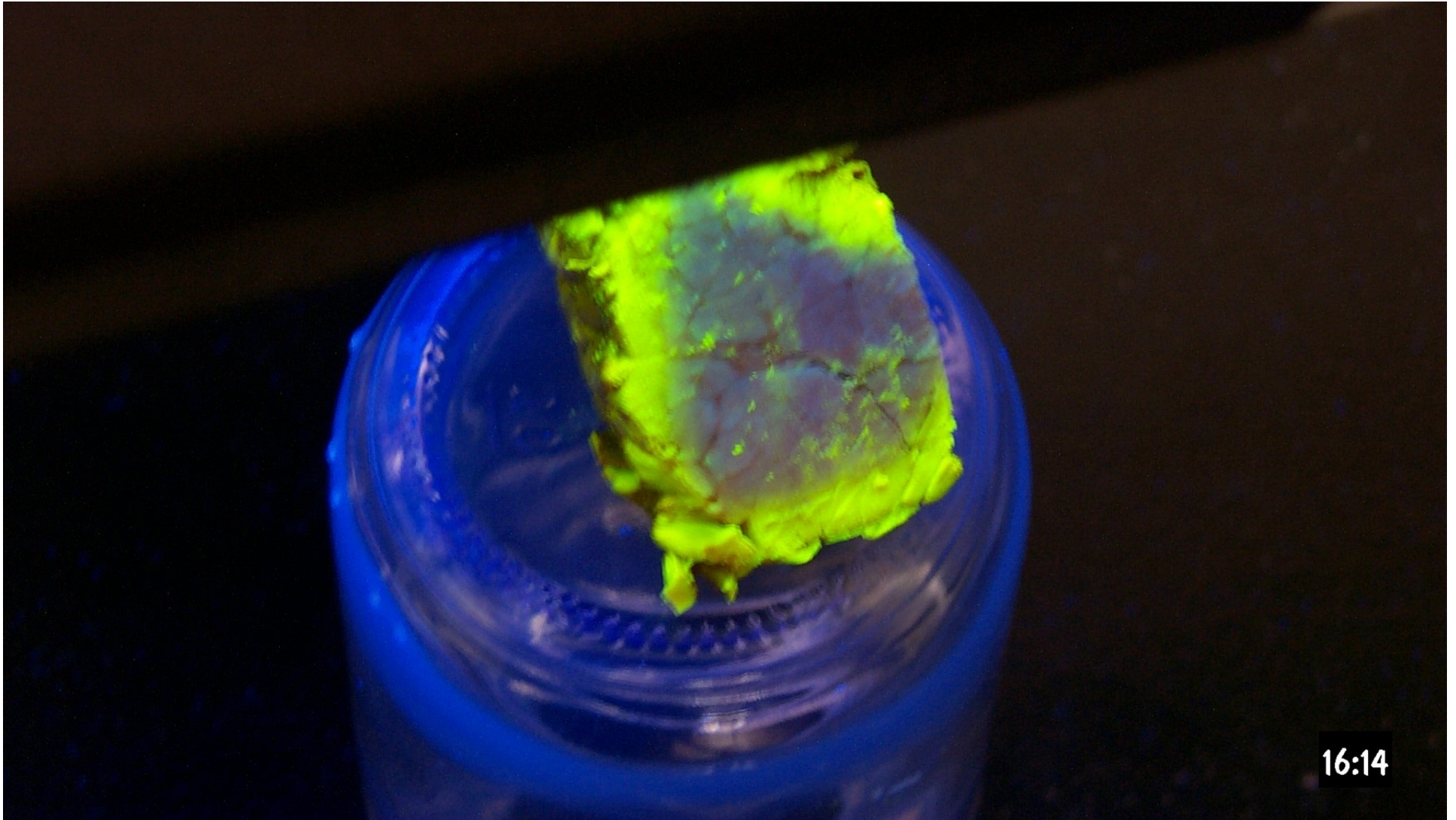
Il y a des sels



Il y a des effets

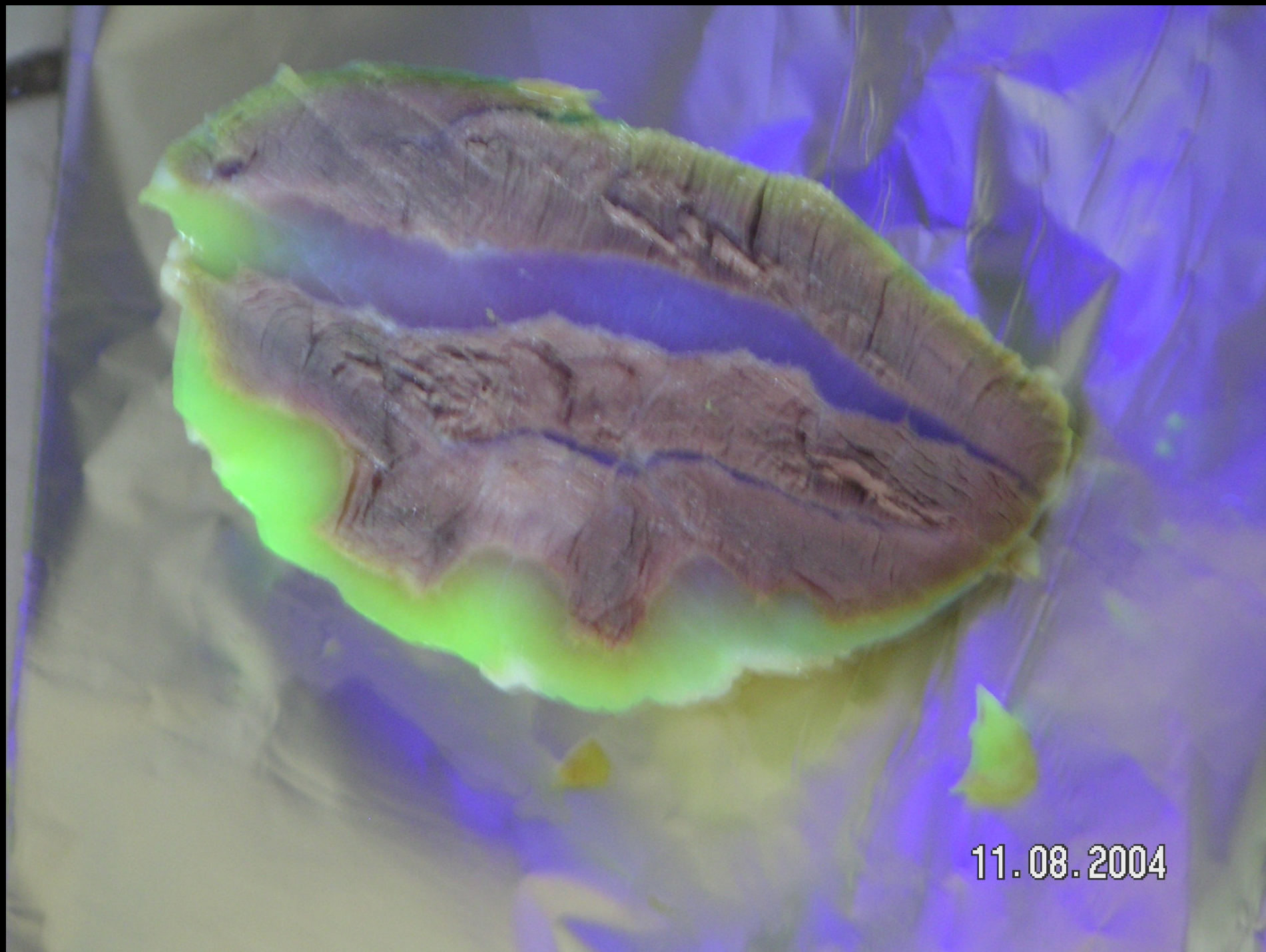


Où le sel va-t-il ?

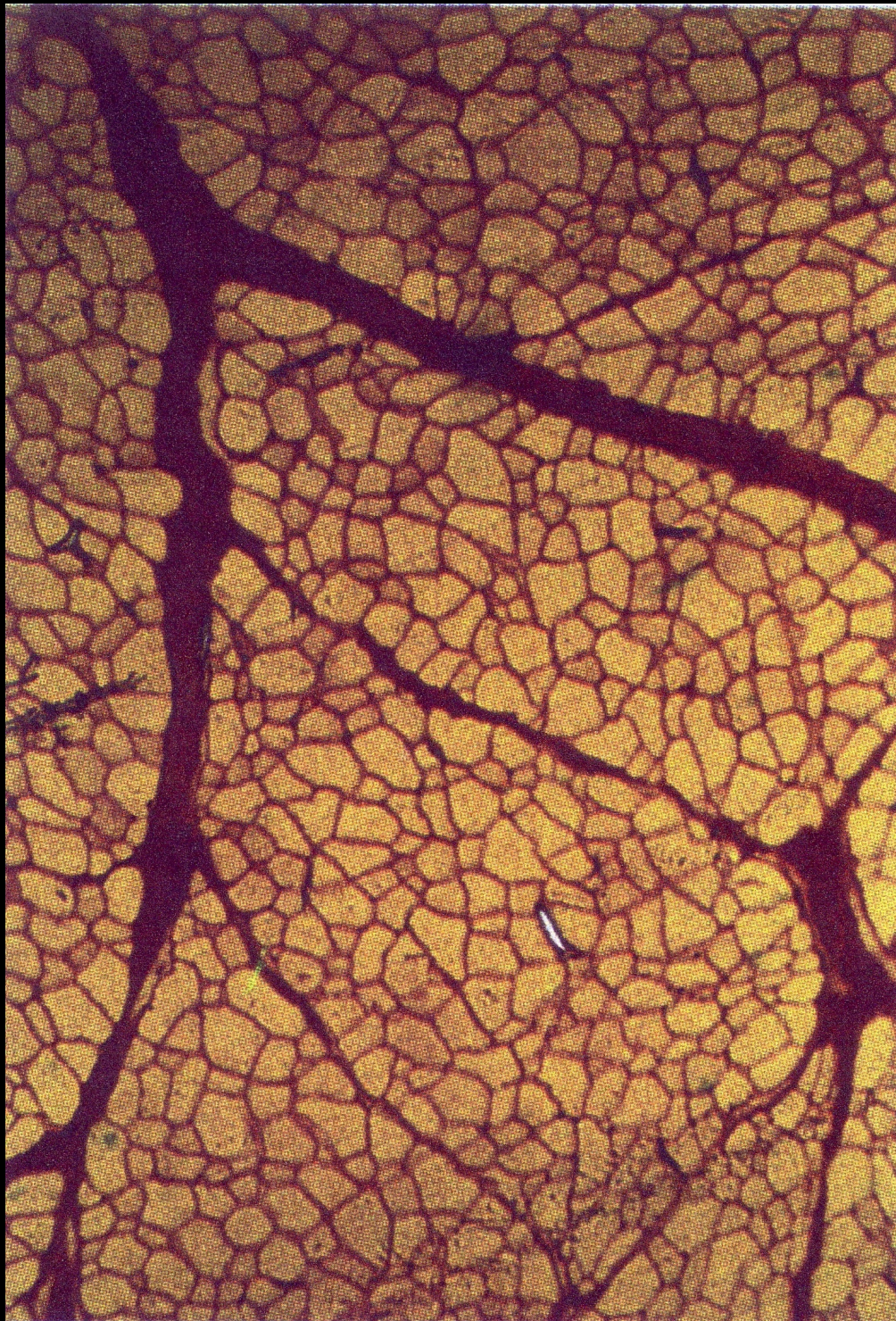


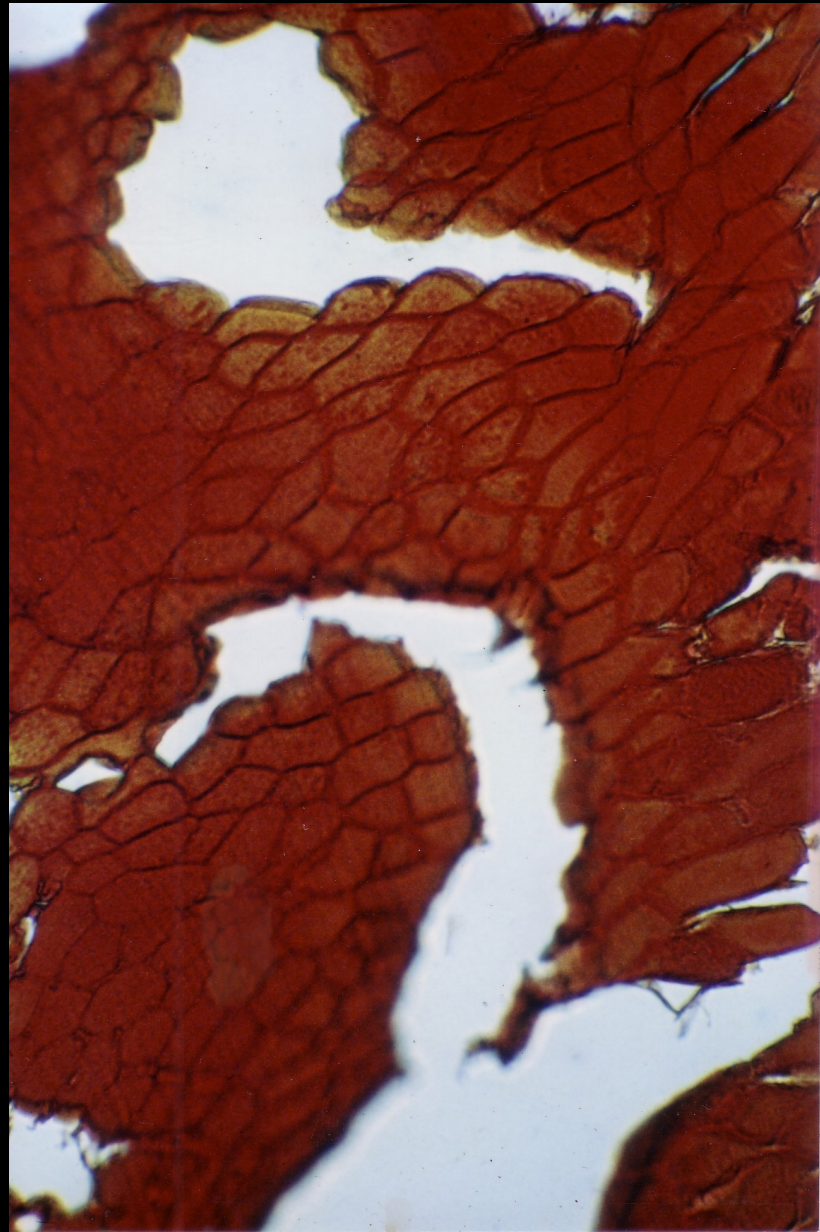
16:14

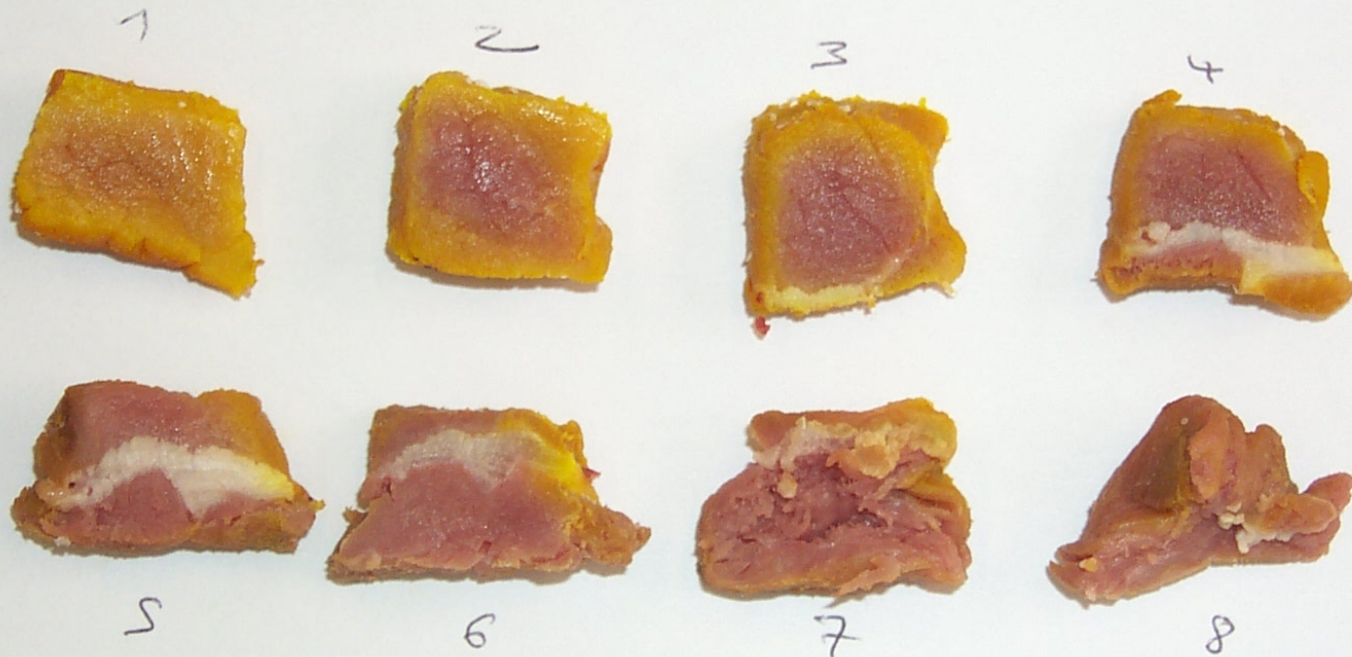




11.08.2004







13:27

Comment saler ?

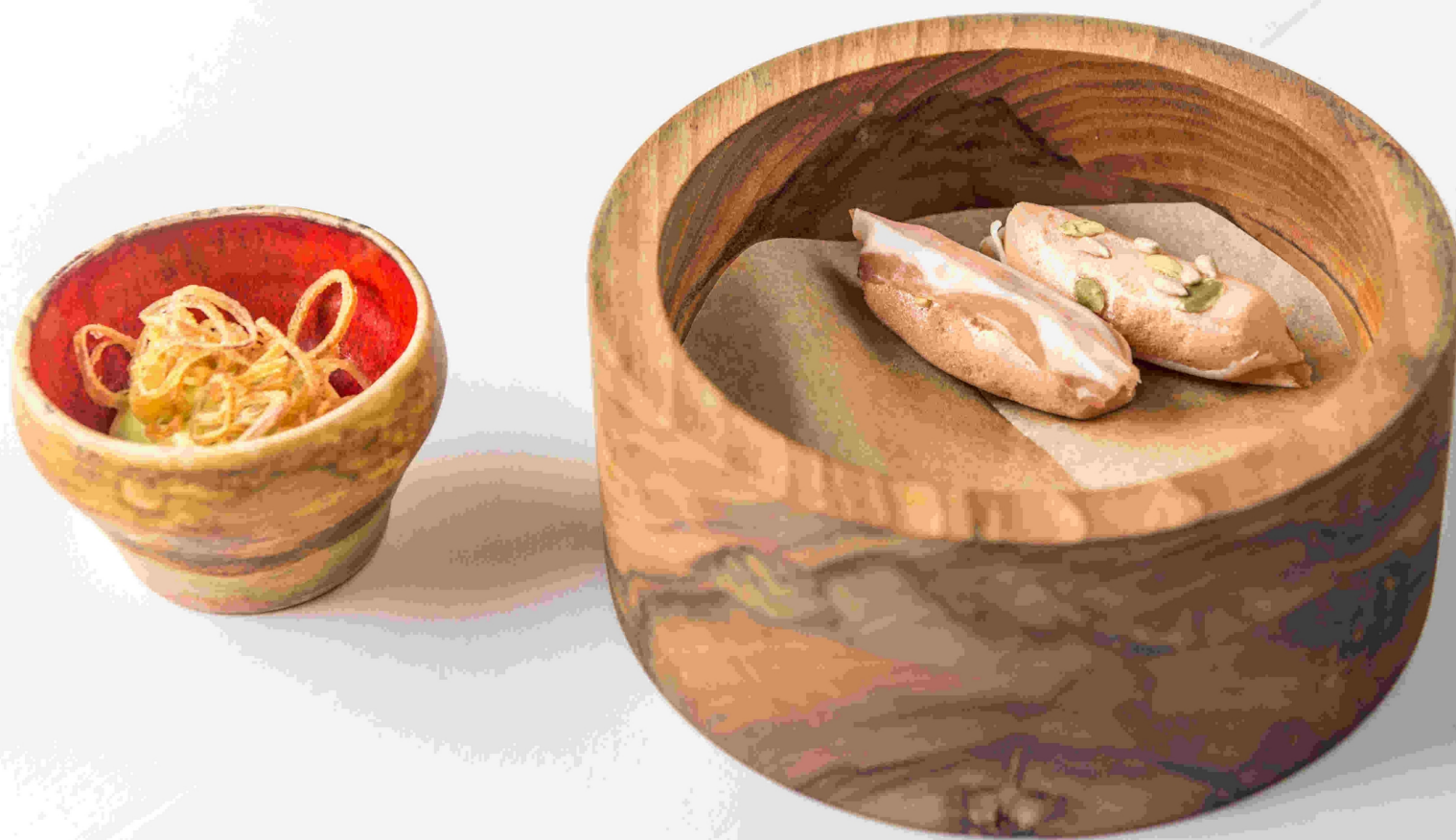


Oui, comment saler ?



**Et avec la cuisine de
synthèse (« note à note »),
comment saler ?**







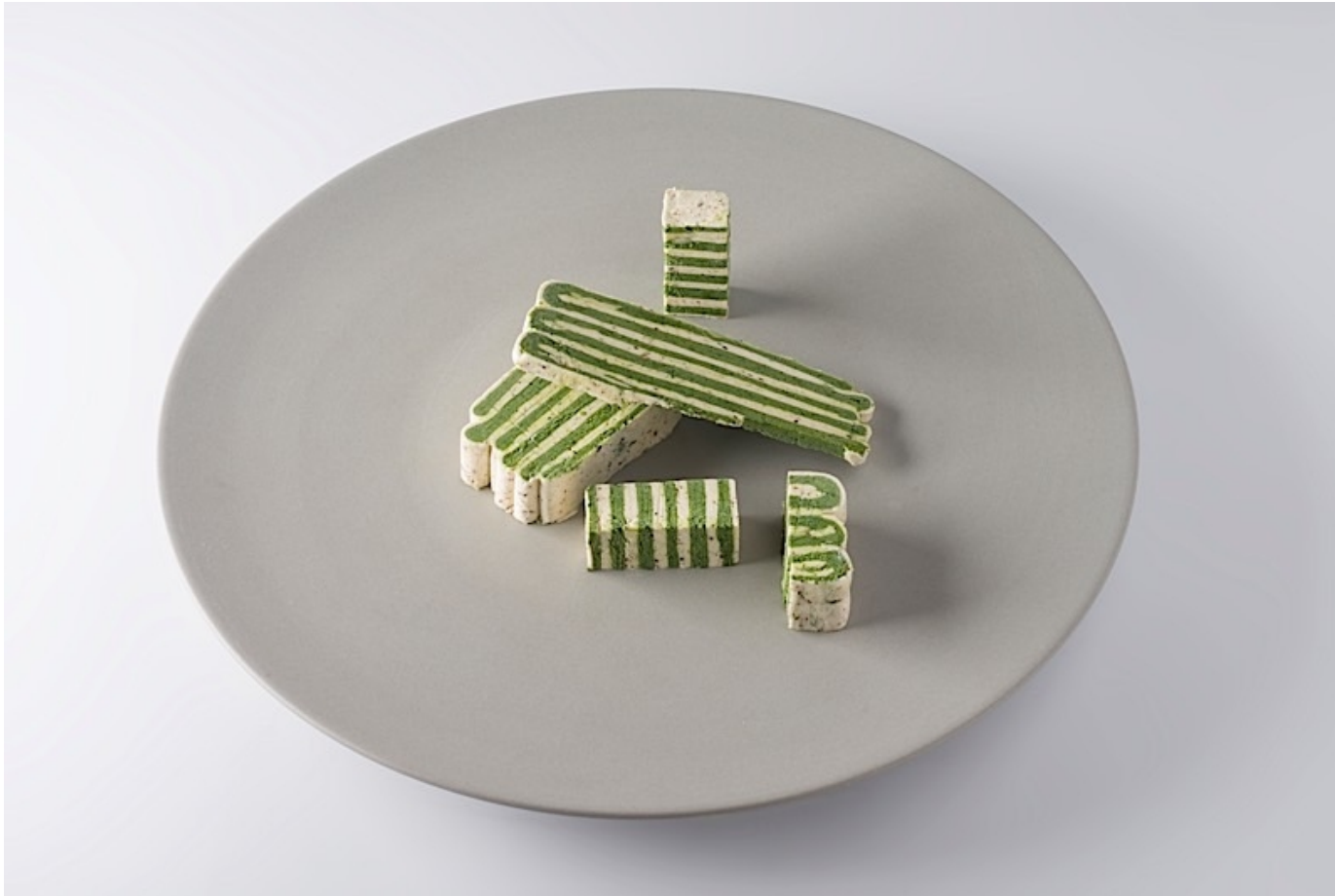








N'oublions pas la construction 1/2



N'oublions pas la construction 2/2



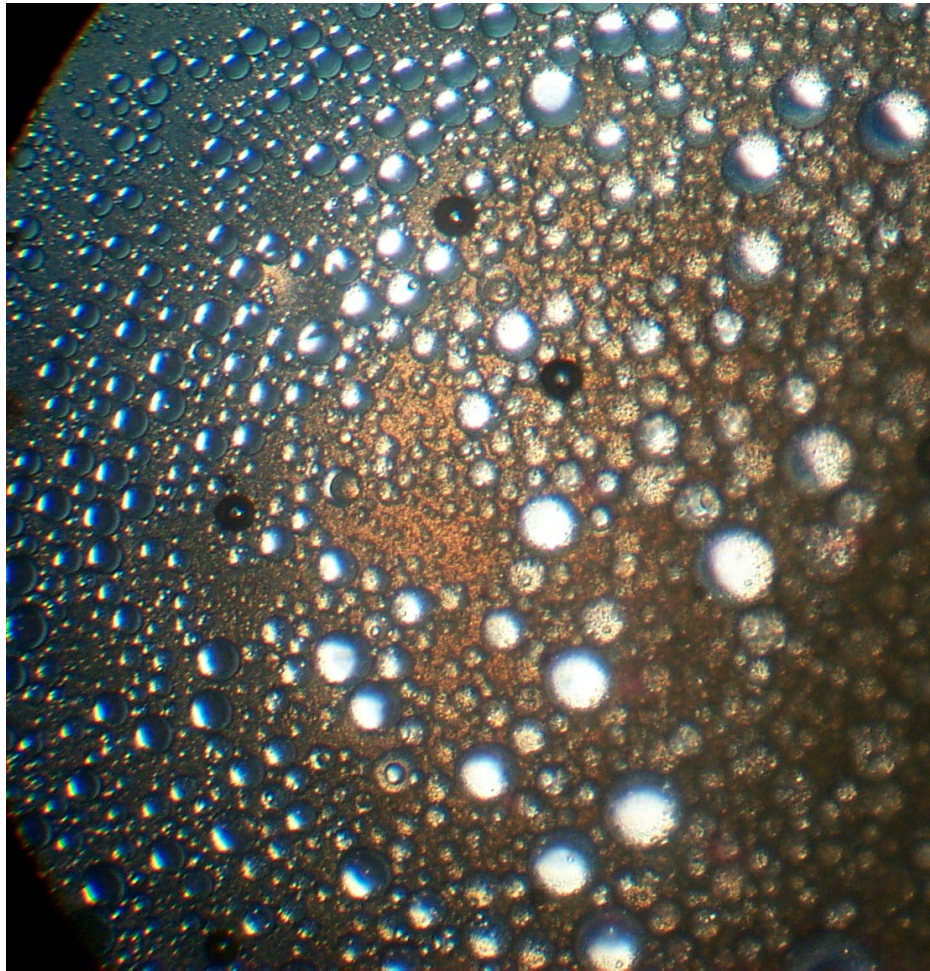
Qu'est-ce qu'un « aliment » ?



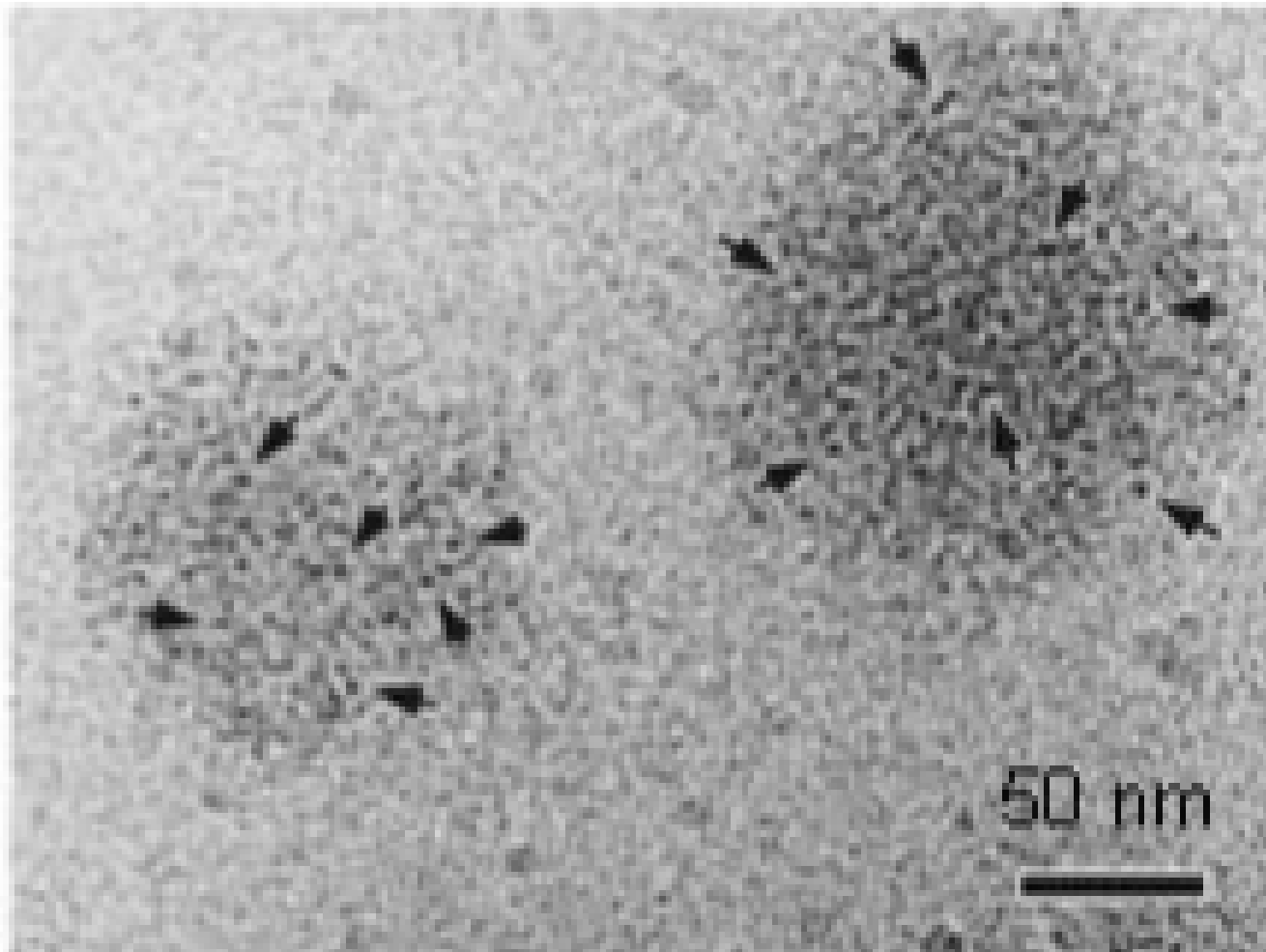
Une construction (organisation) macroscopique



Pour chaque partie, une organisation microscopique



Puis une organisation macroscopique



Jusqu'à une organisation moléculaire



Une description « formelle »

Four symbols :

- / : dispersed into
- + : coexistence of phases, mixture
- @ : inclusion
- σ : superposition (according to x,y,z)
- x : interdispersion

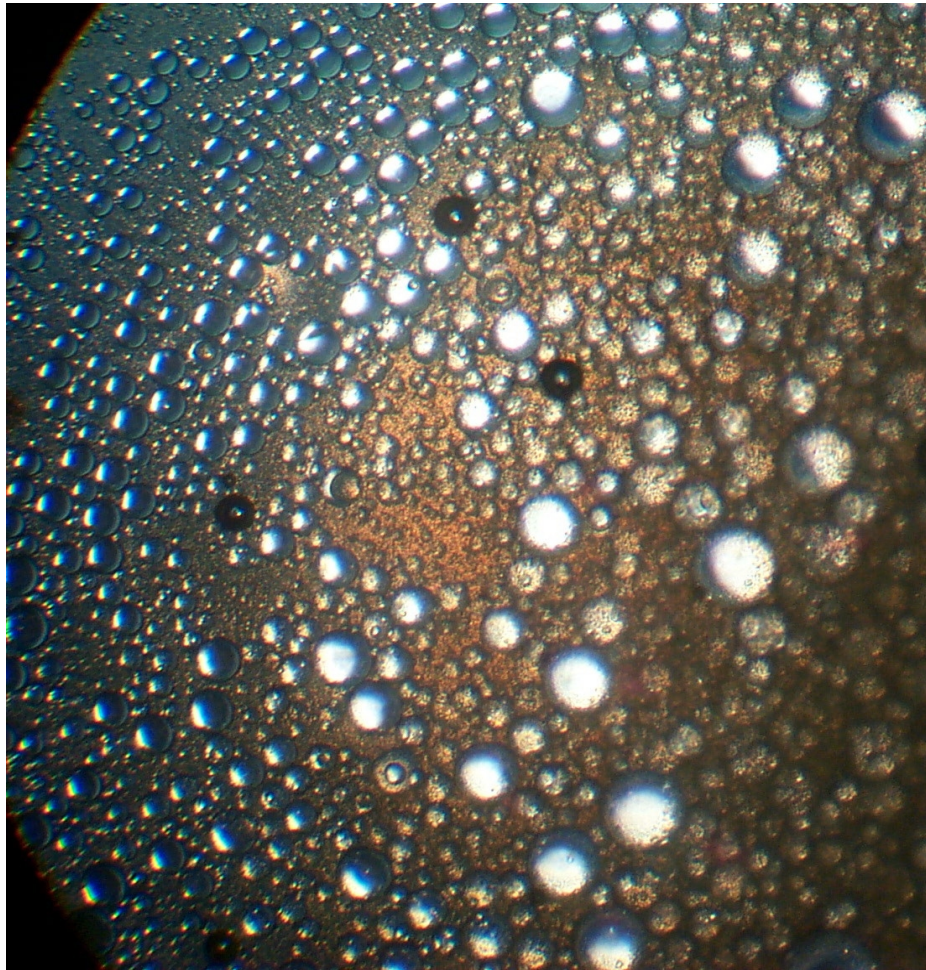
Four kind of phases : Four kind of object:

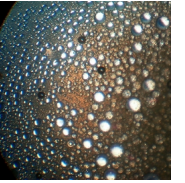
- | | |
|------------------------|----|
| • G : gas | D0 |
| • W : solution | D1 |
| • O : oil | D2 |
| • S1, S2, ... : solids | D3 |

$D_3(S_1) \quad \sigma \quad D_3(S_2) \quad \sigma \quad D_2(L)$

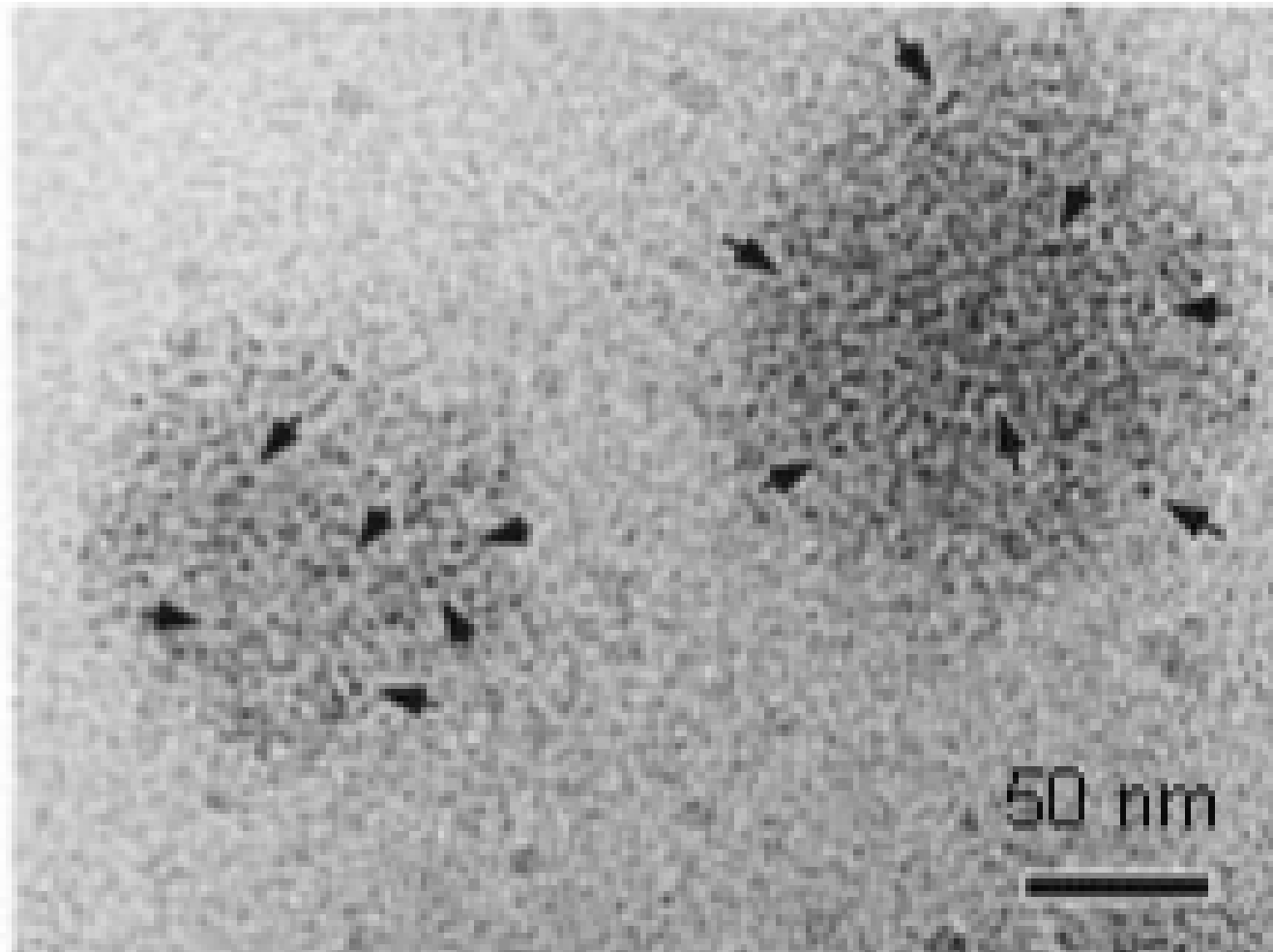


$$D_0(O)/D_3(W)$$

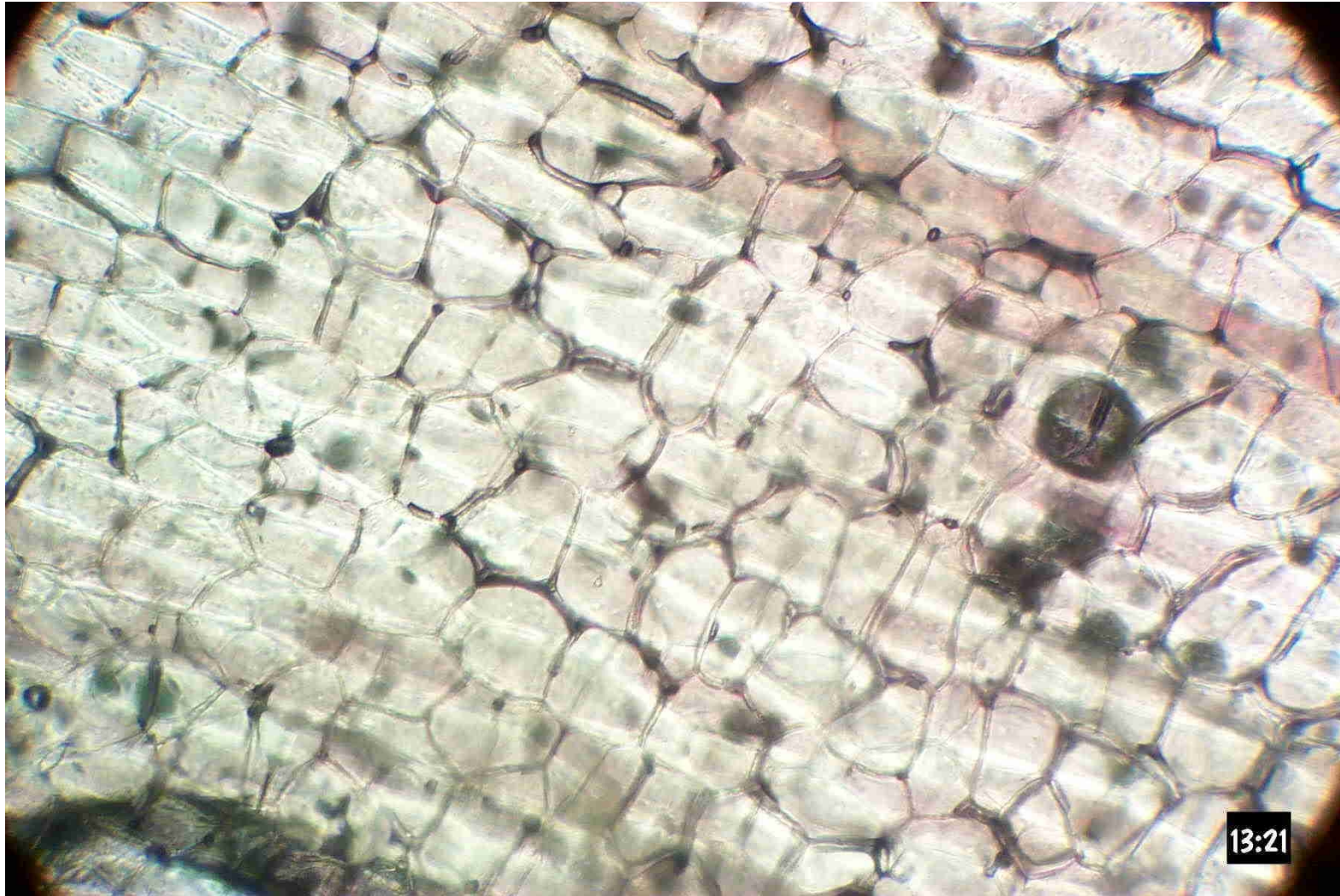




$$[D_3(S_1) \times D_3(W)]/D_3(W)$$



Nous mangeons des gels D0(W)/D3(S)



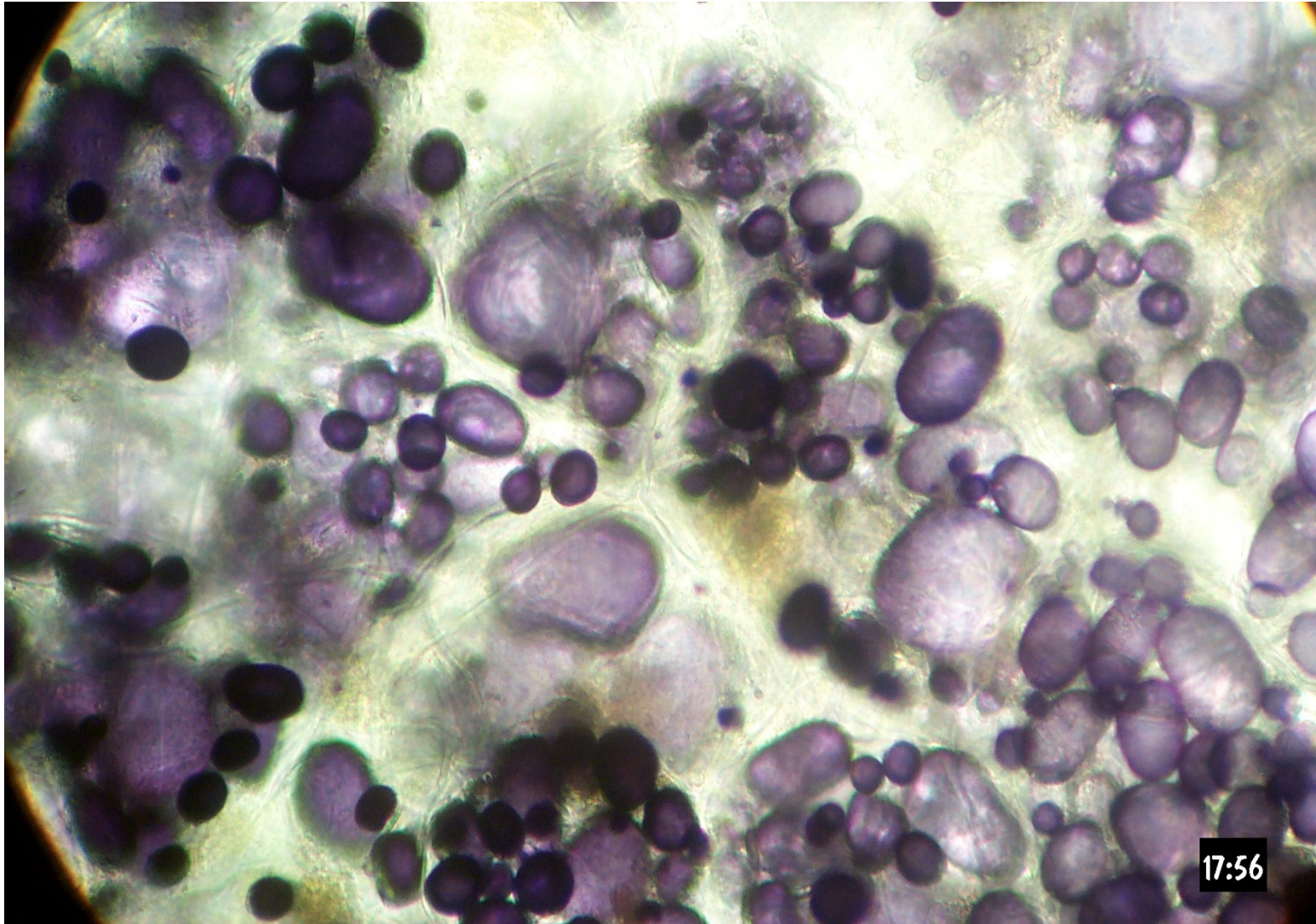
13:21

D'où un gel artificiel

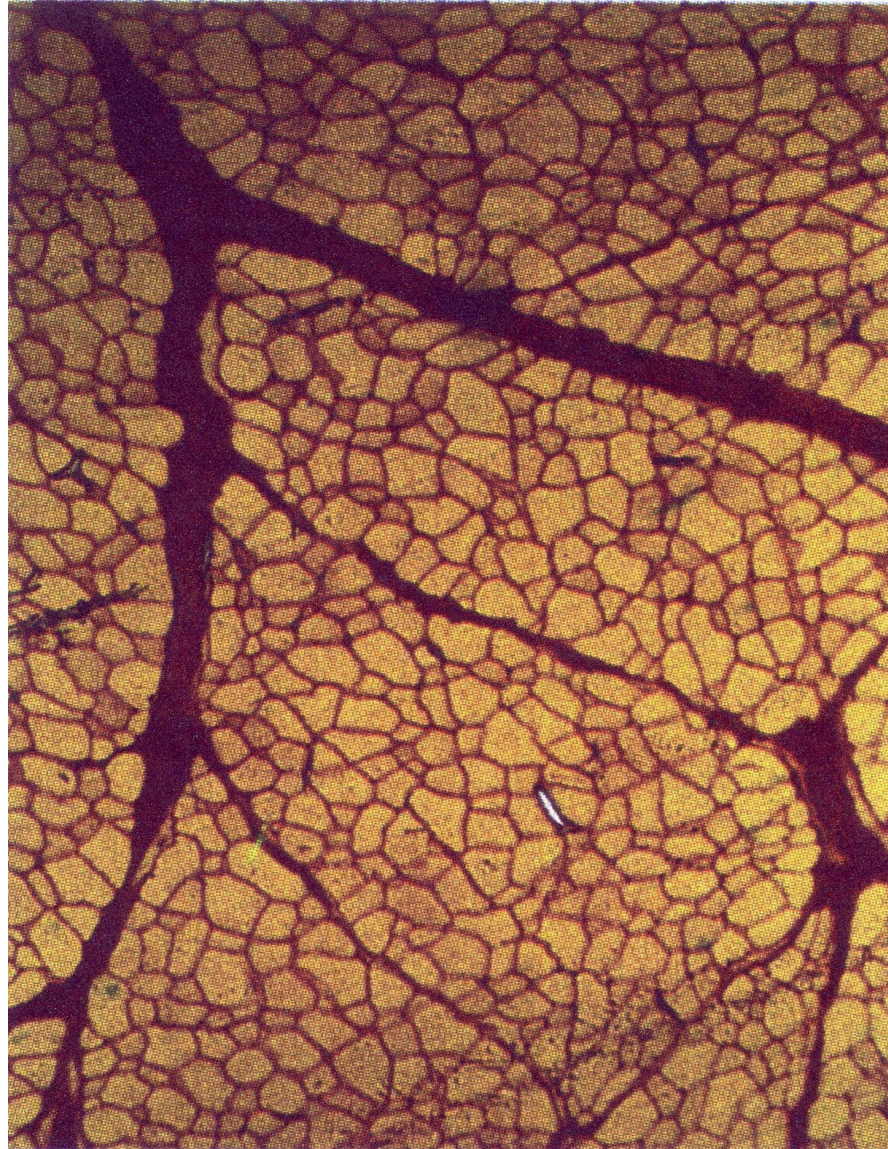
$D_0(W)/D_3(S)$



Parfois, des gels complexes: [D0(S1)/D0(W)]/D3(S2)

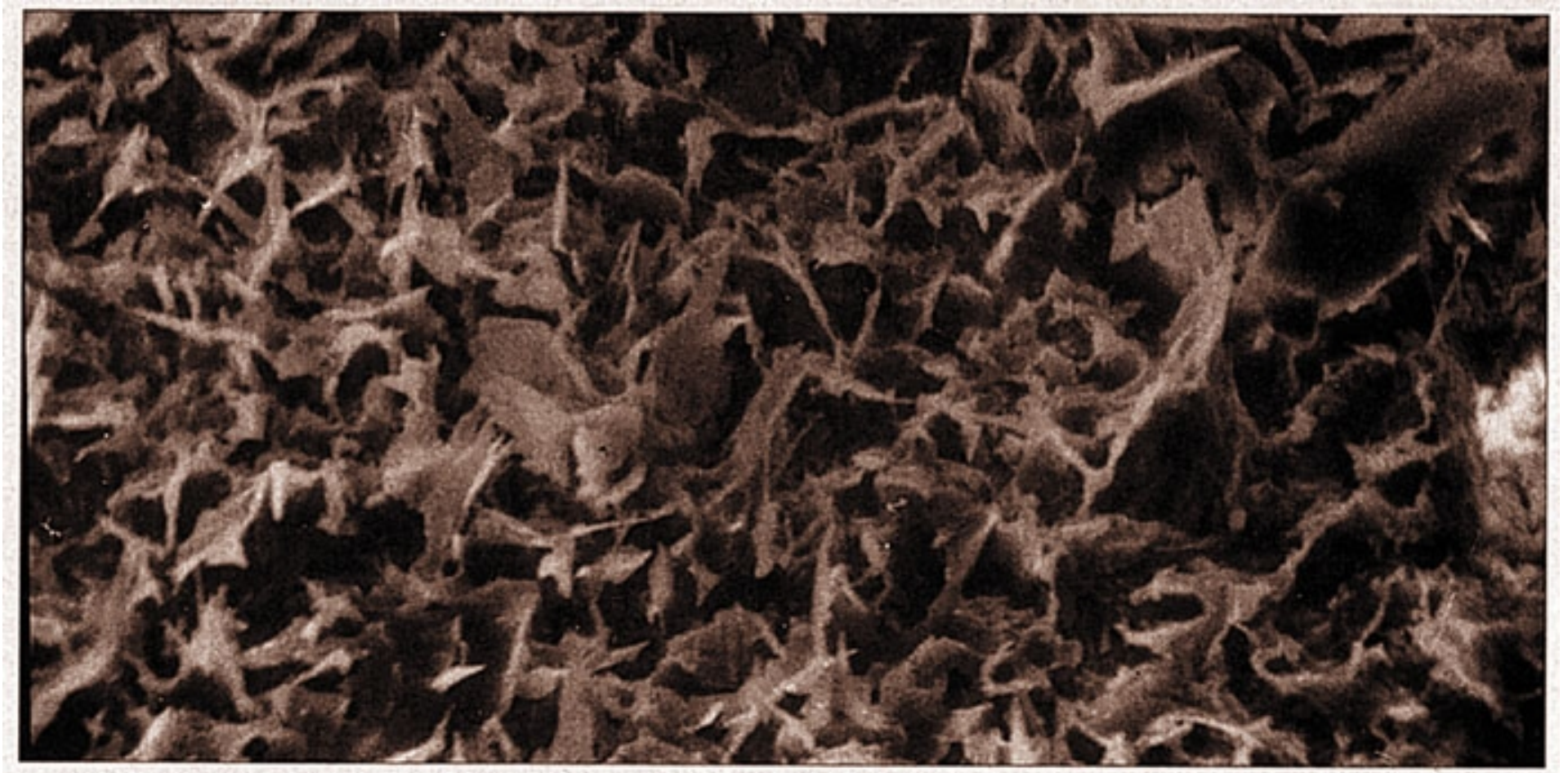


Parfois, des gels avec des "dimensions" : $D_1(W)/D_3(S)$

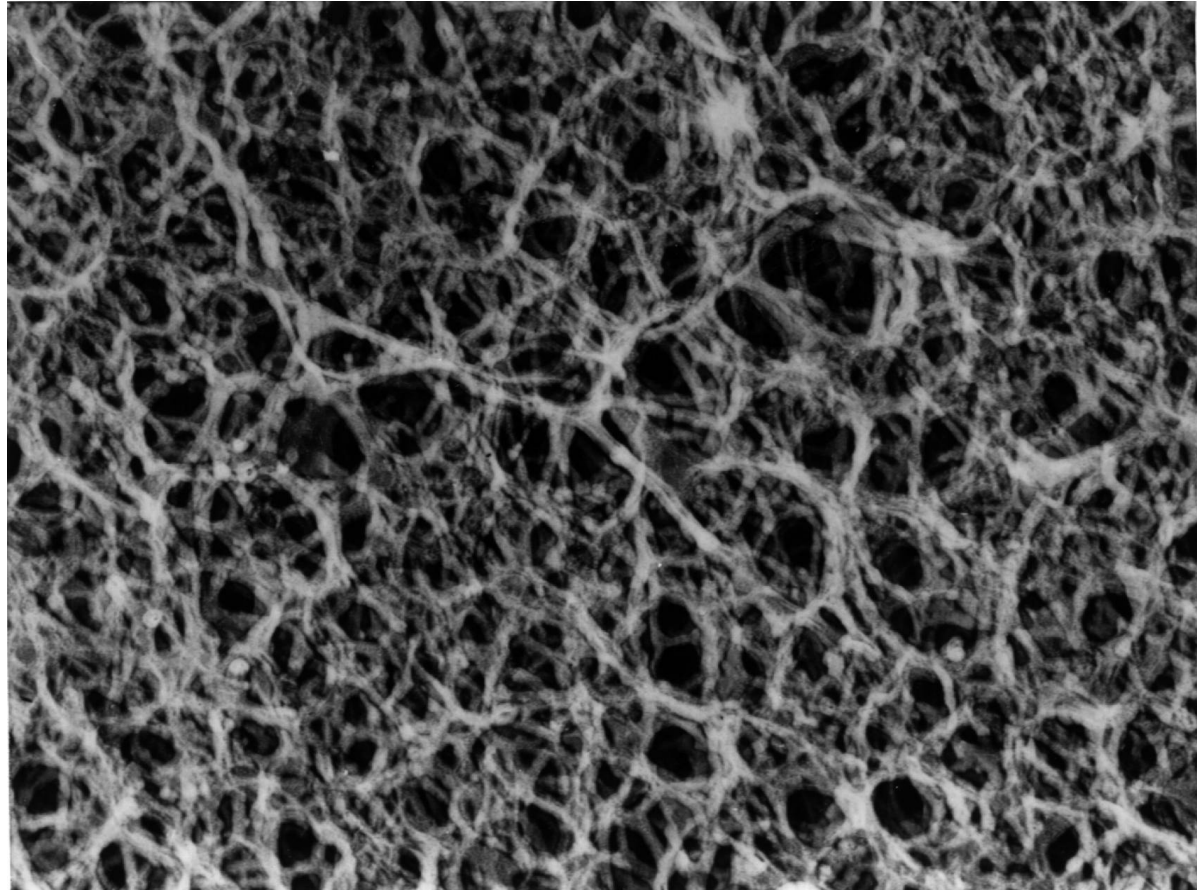


Cliché J. Lacour, INRA Theix

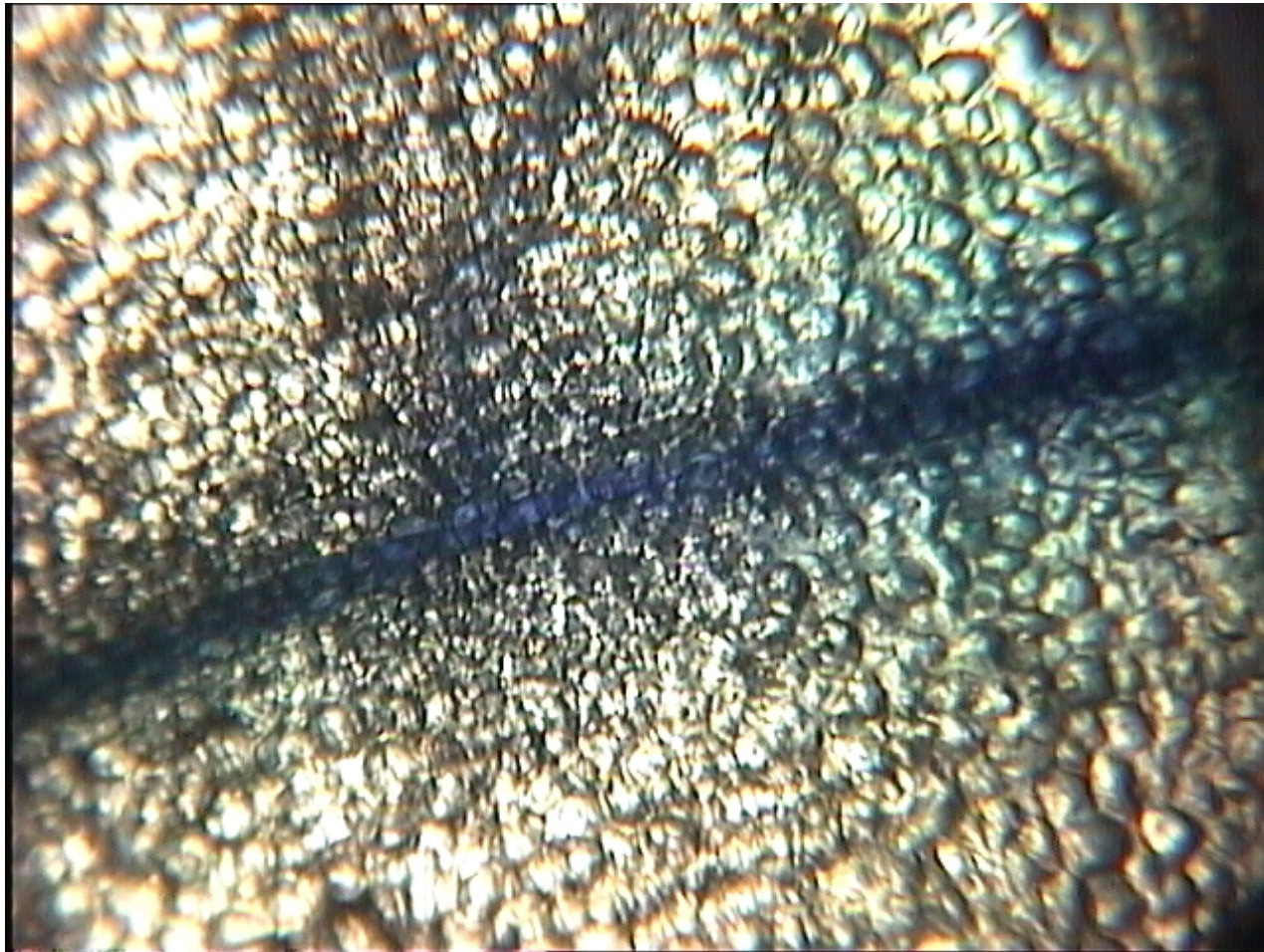
Parfois, des gels mal reconnus: $D3(O) \times D3(S)$



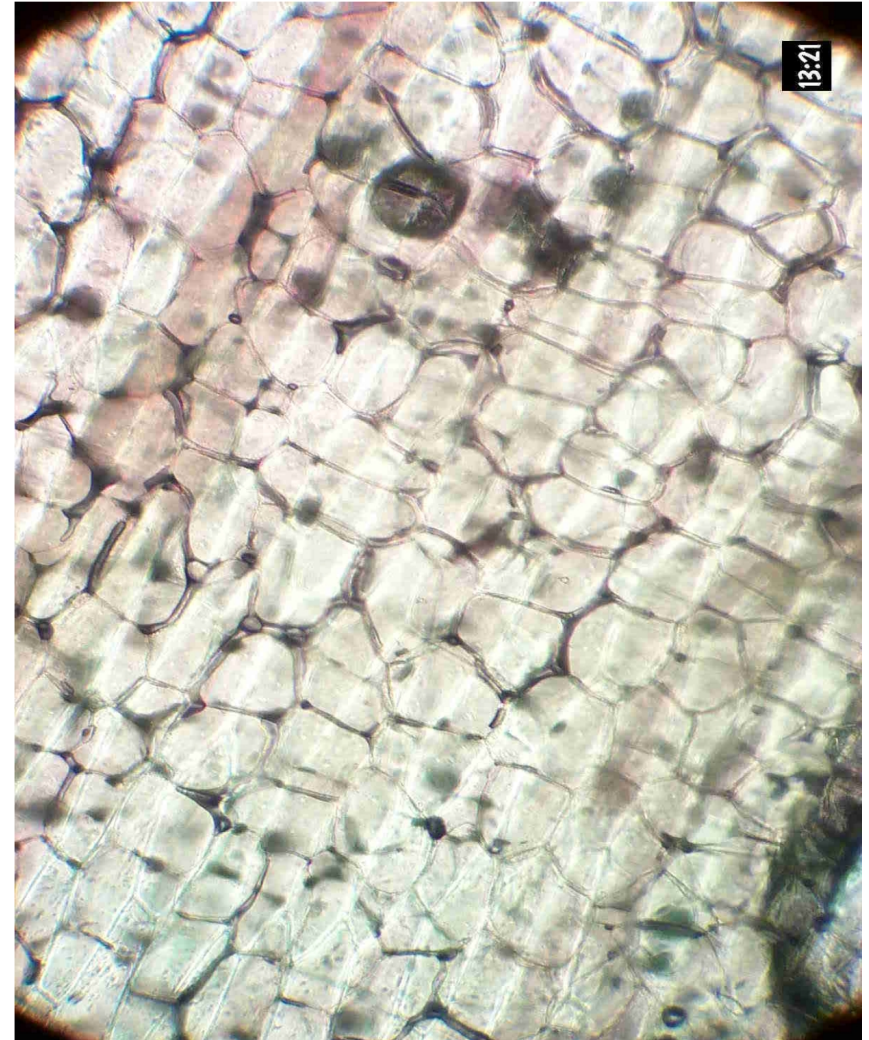
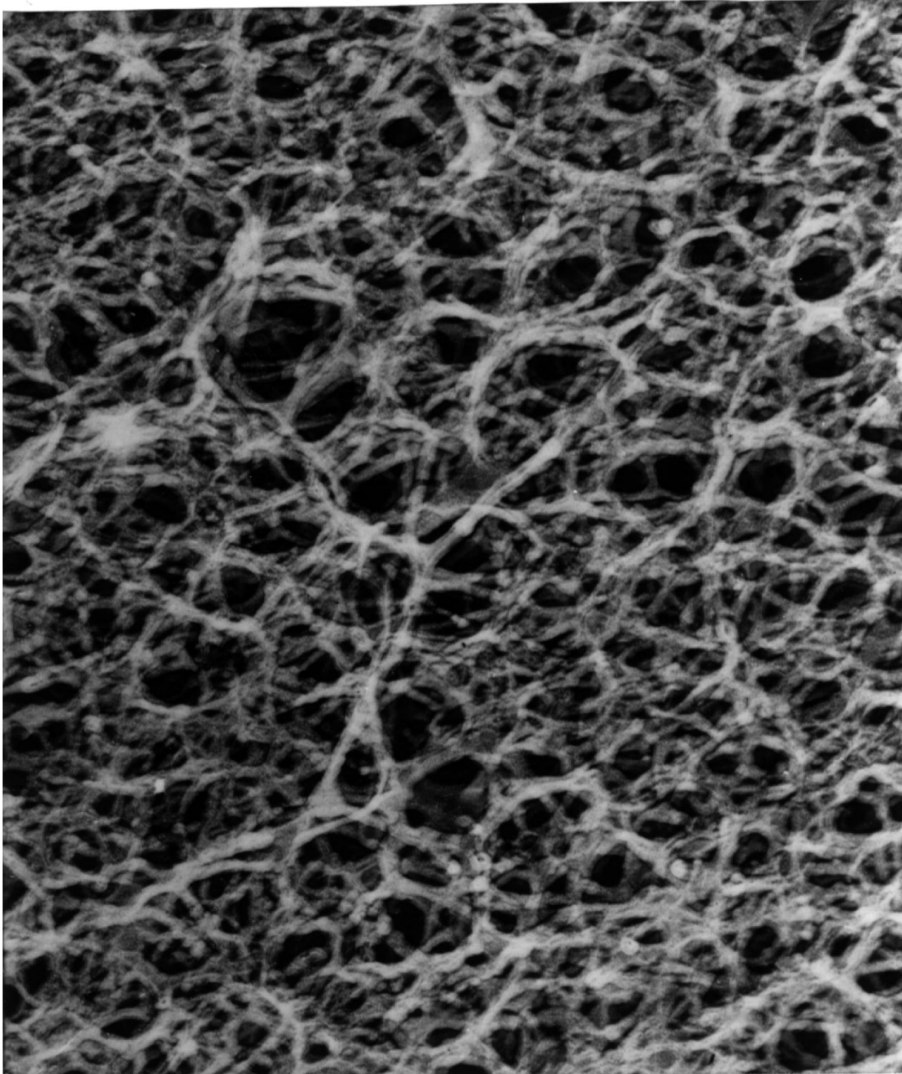
**Parfois, avec de la diffusion :
D3(S)xD3(W)**



Des invitations à voir plus loin : $[D0(W)+D1(W)]/D3(S)$



Combien de gels différents ?



Voici tous les gels de classe 1

```
phase := [W, O, S];
dimension := [D0, D1, D2, D3];
opérateur := ["X", "/", "@", "&sigma;"];
formule := ""; graine := "";
for dim1 to 4 do
  for phas1 to 3 do
    for ope to 4 do
      for dim2 to 4 do
        for phas2 to 3 do
          if phas1 <> phas2 then formule := cat(graine, dimension[dim1], "(", phase[phas1], ")", opérateur[ope], dimension[dim2], "(",
            phase[phas2], ")")
          end if
        end do
      end do
    end do
  end do
end do;
```


16, et 16 exactement

D0(O)/D3(S)	D2(O)xD3(S)
D0(W)/D3(S)	D2(W)xD3(S)
D1(O)/D3(S)	D3(O)xD3(S)
D1(W)/D3(S)	D3(W)xD3(S)
D2(O)/D3(S)	D1(O)@D3(S)
D2(W)/D3(S)	D1(W)@D3(S)
D1(O)xD3(S)	D2(O)@D3(S)
D1(W)xD3(S)	D2(W)@D3(S)

Classe 2: un peu moins de 1500 possibilités

[D0(W)XD0(W)]XD3(S) :	[D0(W)/D2(W)]XD3(S)	[D0(W)σD0(W)]/D3(S)	[D0(W)+D1(S)]/D3(S)	[D0(O)/D0(O)]XD3(S)	[D0(O)@D2(O)]/D3(S)
[D0(W)XD0(W)]/D3(S) :	[D0(W)/D2(W)]/D3(S)	[D0(W)σD0(O)]XD3(S)	[D0(W)+D2(W)]XD3(S)	[D0(O)/D0(O)]/D3(S)	[D0(O)@D2(S)]XD3(S) :
[D0(W)XD0(O)]XD3(S) :	[D0(W)/D2(O)]XD3(S)	[D0(W)σD0(O)]/D3(S)	[D0(W)+D2(W)]/D3(S)	[D0(O)/D0(S)]XD3(S) :	[D0(O)@D2(S)]/D3(S)
[D0(W)XD0(O)]/D3(S) :	[D0(W)/D2(O)]/D3(S)	[D0(W)σD0(S)]XD3(S)	[D0(W)+D2(O)]XD3(S)	[D0(O)/D0(S)]/D3(S)	[D0(O)@D3(W)]XD3(S)
[D0(W)XD0(S)]XD3(S) :	[D0(W)/D2(S)]XD3(S)	[D0(W)σD0(S)]/D3(S) :	[D0(W)+D2(O)]/D3(S)	[D0(O)/D1(W)]XD3(S)	[D0(O)@D3(W)]/D3(S) :
[D0(W)XD0(S)]/D3(S) :	[D0(W)/D2(S)]/D3(S)	[D0(W)σD1(W)]XD3(S) :	[D0(W)+D2(S)]XD3(S)	[D0(O)/D1(W)]/D3(S) :	[D0(O)@D3(O)]XD3(S) :
[D0(W)XD1(W)]XD3(S)	[D0(W)/D3(W)]XD3(S)	[D0(W)σD1(W)]/D3(S) :	[D0(W)+D2(S)]/D3(S)	[D0(O)/D1(O)]XD3(S)	[D0(O)@D3(O)]/D3(S)
[D0(W)XD1(W)]/D3(S) :	[D0(W)/D3(W)]/D3(S)	[D0(W)σD1(O)]XD3(S) :	[D0(W)+D3(W)]XD3(S)	[D0(O)/D1(O)]/D3(S)	[D0(O)@D3(S)]XD3(S) :
[D0(W)XD1(O)]XD3(S) :	[D0(W)/D3(O)]XD3(S)	[D0(W)σD1(O)]/D3(S) :	[D0(W)+D3(W)]/D3(S)	[D0(O)/D1(S)]XD3(S)	[D0(O)@D3(S)]/D3(S)
[D0(W)XD1(O)]/D3(S)	[D0(W)/D3(O)]/D3(S)	[D0(W)σD1(S)]XD3(S) :	[D0(W)+D3(O)]XD3(S)	[D0(O)/D1(S)]/D3(S) :	[D0(O)σD0(W)]XD3(S)
[D0(W)XD1(S)]XD3(S) :	[D0(W)/D3(S)]XD3(S)	[D0(W)σD1(S)]/D3(S)	[D0(W)+D3(O)]/D3(S)	[D0(O)/D2(W)]XD3(S) :	[D0(O)σD0(W)]/D3(S) :
[D0(W)XD1(S)]/D3(S)	[D0(W)/D3(S)]/D3(S)	[D0(W)σD1(S)]/D3(S)	[D0(W)+D3(S)]XD3(S)	[D0(O)/D2(W)]/D3(S)	[D0(O)σD0(O)]XD3(S)
[D0(W)XD2(W)]XD3(S)	[D0(W)@D0(W)]XD3(S)	[D0(W)σD2(W)]XD3(S)	[D0(W)+D3(S)]/D3(S)	[D0(O)/D2(O)]XD3(S)	[D0(O)σD0(O)]/D3(S) :
[D0(W)XD2(W)]/D3(S)	[D0(W)@D0(W)]/D3(S)	[D0(W)σD2(W)]/D3(S)	[D0(O)XD0(W)]XD3(S)	[D0(O)/D2(O)]/D3(S) :	[D0(O)σD0(S)]XD3(S) :
[D0(W)XD2(O)]XD3(S)	[D0(W)@D0(O)]XD3(S)	[D0(W)σD2(O)]XD3(S)	[D0(O)XD0(W)]/D3(S)	[D0(O)/D2(S)]XD3(S)	[D0(O)σD0(S)]/D3(S)
[D0(W)XD2(O)]/D3(S)	[D0(W)@D0(O)]/D3(S)	[D0(W)σD2(O)]/D3(S)	[D0(O)XD0(O)]XD3(S)	[D0(O)/D2(S)]/D3(S)	[D0(O)σD1(W)]XD3(S)
[D0(W)XD2(S)]XD3(S)	[D0(W)@D0(S)]XD3(S)	[D0(W)σD2(S)]XD3(S)	[D0(O)XD0(O)]/D3(S)	[D0(O)/D3(W)]XD3(S) :	[D0(O)σD1(W)]/D3(S)
[D0(W)XD2(S)]/D3(S)	[D0(W)@D0(S)]/D3(S)	[D0(W)σD2(S)]/D3(S)	[D0(O)XD0(S)]XD3(S)	[D0(O)/D3(O)]XD3(S)	[D0(O)σD1(O)]XD3(S)
[D0(W)XD3(W)]XD3(S)	[D0(W)@D1(W)]XD3(S)	[D0(W)σD3(W)]XD3(S)	[D0(O)XD0(S)]/D3(S)	[D0(O)/D3(O)]/D3(S)	[D0(O)σD1(O)]/D3(S)
[D0(W)XD3(W)]/D3(S) :	[D0(W)@D1(W)]/D3(S)	[D0(W)σD3(W)]/D3(S)	[D0(O)XD1(W)]XD3(S)	[D0(O)/D3(S)]XD3(S) :	[D0(O)σD1(S)]XD3(S) :
[D0(W)XD3(O)]XD3(S)	[D0(W)@D1(O)]XD3(S)	[D0(W)σD3(O)]XD3(S)	[D0(O)XD1(W)]/D3(S)	[D0(O)@D0(W)]XD3(S)	[D0(O)σD1(S)]/D3(S)
[D0(W)XD3(O)]/D3(S)	[D0(W)@D1(O)]/D3(S)	[D0(W)σD3(O)]/D3(S)	[D0(O)XD1(O)]XD3(S)	[D0(O)@D0(W)]/D3(S)	[D0(O)σD2(W)]XD3(S)
[D0(W)XD3(S)]XD3(S) :	[D0(W)@D1(S)]XD3(S)	[D0(W)σD3(S)]XD3(S)	[D0(O)XD1(O)]/D3(S)	[D0(O)@D0(O)]XD3(S)	[D0(O)σD2(W)]/D3(S) :
[D0(W)XD3(S)]/D3(S)	[D0(W)@D1(S)]/D3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD1(S)]XD3(S)	[D0(O)@D0(O)]/D3(S)	[D0(O)σD2(O)]XD3(S)
[D0(W)/D0(W)]XD3(S) :	[D0(W)@D2(W)]XD3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD1(S)]/D3(S)	[D0(O)@D0(S)]XD3(S)	[D0(O)σD2(O)]/D3(S)
[D0(W)/D0(W)]/D3(S)	[D0(W)@D2(W)]/D3(S)	[D0(W)+D0(W)]XD3(S) :	[D0(O)XD2(W)]XD3(S)	[D0(O)@D0(S)]/D3(S)	[D0(O)σD2(S)]XD3(S)
[D0(W)/D0(O)]XD3(S)	[D0(W)@D2(O)]XD3(S)	[D0(W)+D0(W)]/D3(S)	[D0(O)XD2(W)]/D3(S)	[D0(O)@D1(W)]XD3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(O)]/D3(S)	[D0(W)@D2(O)]/D3(S)	[D0(W)+D0(O)]XD3(S)	[D0(O)XD2(O)]XD3(S)	[D0(O)@D1(W)]/D3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(S)]XD3(S)	[D0(W)@D2(S)]XD3(S)	[D0(W)+D0(O)]/D3(S)	[D0(O)XD2(O)]/D3(S)	[D0(O)@D1(O)]XD3(S)	[D0(O)σD3(W)]XD3(S) :
[D0(W)/D0(S)]/D3(S) :	[D0(W)@D2(S)]/D3(S)	[D0(W)+D0(S)]XD3(S)	[D0(O)XD2(S)]XD3(S)	[D0(O)@D1(O)]/D3(S)	[D0(O)σD3(W)]/D3(S) :
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[D0(W)/D1(W)]/D3(S)	[D0(W)@D3(W)]/D3(S)	[D0(W)+D1(W)]XD3(S) :	[D0(O)XD3(W)]XD3(S)	[D0(O)@D1(S)]/D3(S)	[D0(O)σD3(O)]/D3(S)
[D0(W)/D1(O)]XD3(S)	[D0(W)@D3(O)]XD3(S)	[D0(W)+D1(W)]/D3(S) :	[D0(O)XD3(W)]/D3(S)	[D0(O)@D2(W)]XD3(S)	[D0(O)σD3(S)]XD3(S) :
[D0(W)/D1(O)]/D3(S)	[D0(W)@D3(O)]/D3(S)	[D0(W)+D1(O)]XD3(S)	[D0(O)XD3(O)]XD3(S)	[D0(O)@D2(W)]/D3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(S)]XD3(S)	[D0(W)@D3(S)]XD3(S)	[D0(W)+D1(O)]/D3(S)	[D0(O)XD3(O)]/D3(S)	[D0(O)@D2(O)]XD3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(S)]/D3(S) :	[D0(W)@D3(S)]/D3(S)	[D0(W)+D1(S)]XD3(S)	[D0(O)XD3(S)]XD3(S)		
	[D0(W)σD0(W)]XD3(S)		[D0(O)XD3(S)]/D3(S)		

Et ici...

[D0(W)XD0(W)]XD3(S) :	[D0(W)/D2(W)]XD3(S)	[D0(W)σD0(W)]/D3(S)	[D0(W)+D1(S)]/D3(S)	[D0(O)/D0(O)]XD3(S)	[D0(O)@D2(O)]/D3(S)
[D0(W)XD0(W)]/D3(S) :	[D0(W)/D2(W)]/D3(S)	[D0(W)σD0(O)]XD3(S)	[D0(W)+D2(W)]XD3(S)	[D0(O)/D0(O)]/D3(S)	[D0(O)@D2(S)]XD3(S) :
[D0(W)XD0(O)]XD3(S) :	[D0(W)/D2(O)]XD3(S)	[D0(W)σD0(O)]/D3(S)	[D0(W)+D2(W)]/D3(S)	[D0(O)/D0(S)]XD3(S) :	[D0(O)@D2(S)]/D3(S)
[D0(W)XD0(O)]/D3(S)	[D0(W)/D2(O)]/D3(S)	[D0(W)σD0(S)]XD3(S)	[D0(W)+D2(O)]XD3(S)	[D0(O)/D0(S)]/D3(S)	[D0(O)@D3(W)]XD3(S)
[D0(W)XD0(S)]XD3(S) :	[D0(W)/D2(S)]XD3(S)	[D0(W)σD0(S)]/D3(S) :	[D0(W)+D2(O)]/D3(S)	[D0(O)/D1(W)]XD3(S)	[D0(O)@D3(W)]/D3(S) :
[D0(W)XD0(S)]/D3(S) :	[D0(W)/D2(S)]/D3(S)	[D0(W)σD1(W)]XD3(S) :	[D0(W)+D2(S)]XD3(S)	[D0(O)/D1(W)]/D3(S) :	[D0(O)@D3(O)]XD3(S) :
[D0(W)XD1(W)]XD3(S)	[D0(W)/D3(W)]XD3(S)	[D0(W)σD1(W)]/D3(S) :	[D0(W)+D2(S)]/D3(S)	[D0(O)/D1(O)]XD3(S) :	[D0(O)@D3(O)]/D3(S)
[D0(W)XD1(W)]/D3(S) :	[D0(W)/D3(W)]/D3(S)	[D0(W)σD1(O)]XD3(S) :	[D0(W)+D3(W)]XD3(S)	[D0(O)/D1(O)]/D3(S) :	[D0(O)@D3(S)]XD3(S) :
[D0(W)XD1(O)]XD3(S) :	[D0(W)/D3(O)]XD3(S)	[D0(W)σD1(O)]/D3(S) :	[D0(W)+D3(W)]/D3(S)	[D0(O)/D1(S)]XD3(S)	[D0(O)@D3(S)]/D3(S)
[D0(W)XD1(O)]/D3(S)	[D0(W)/D3(O)]/D3(S)	[D0(W)σD1(S)]XD3(S) :	[D0(W)+D3(O)]XD3(S)	[D0(O)/D1(S)]/D3(S) :	[D0(O)σD0(W)]XD3(S)
[D0(W)XD1(S)]XD3(S) :	[D0(W)/D3(S)]XD3(S)	[D0(W)σD1(S)]/D3(S)	[D0(W)+D3(O)]/D3(S)	[D0(O)/D2(W)]XD3(S) :	[D0(O)σD0(W)]/D3(S) :
[D0(W)XD1(S)]/D3(S)	[D0(W)/D3(S)]/D3(S)	[D0(W)σD2(W)]XD3(S)	[D0(W)+D3(S)]XD3(S)	[D0(O)/D2(W)]/D3(S)	[D0(O)σD0(O)]XD3(S)
[D0(W)XD2(W)]XD3(S)	[D0(W)@D0(W)]XD3(S)	[D0(W)σD2(W)]/D3(S)	[D0(W)+D3(S)]/D3(S)	[D0(O)/D2(O)]XD3(S)	[D0(O)σD0(O)]/D3(S) :
[D0(W)XD2(W)]/D3(S)	[D0(W)@D0(W)]/D3(S)	[D0(W)σD2(O)]XD3(S)	[D0(O)XD0(W)]XD3(S)	[D0(O)/D2(O)]/D3(S) :	[D0(O)σD0(S)]XD3(S) :
[D0(W)XD2(O)]XD3(S)	[D0(W)@D0(O)]XD3(S)	[D0(W)σD2(O)]/D3(S)	[D0(O)XD0(W)]/D3(S)	[D0(O)/D2(S)]XD3(S)	[D0(O)σD0(S)]/D3(S)
[D0(W)XD2(O)]/D3(S)	[D0(W)@D0(O)]/D3(S)	[D0(W)σD2(S)]XD3(S)	[D0(O)XD0(O)]XD3(S)	[D0(O)/D2(S)]/D3(S) :	[D0(O)σD1(W)]XD3(S)
[D0(W)XD2(S)]XD3(S)	[D0(W)@D0(S)]XD3(S)	[D0(W)σD2(S)]/D3(S)	[D0(O)XD0(O)]/D3(S)	[D0(O)/D3(W)]XD3(S) :	[D0(O)σD1(W)]/D3(S)
[D0(W)XD2(S)]/D3(S)	[D0(W)@D0(S)]/D3(S)	[D0(W)σD3(W)]XD3(S)	[D0(O)XD0(S)]XD3(S)	[D0(O)/D3(O)]XD3(S)	[D0(O)σD1(O)]XD3(S)
[D0(W)XD3(W)]XD3(S)	[D0(W)@D1(W)]XD3(S)	[D0(W)σD3(W)]/D3(S)	[D0(O)XD1(W)]XD3(S)	[D0(O)/D3(O)]/D3(S) :	[D0(O)σD1(O)]/D3(S)
[D0(W)XD3(W)]/D3(S) :	[D0(W)@D1(W)]/D3(S)	[D0(W)σD3(O)]XD3(S)	[D0(O)XD1(W)]/D3(S)	[D0(O)/D3(S)]XD3(S) :	[D0(O)σD1(S)]XD3(S) :
[D0(W)XD3(O)]XD3(S)	[D0(W)@D1(O)]XD3(S)	[D0(W)σD3(O)]/D3(S)	[D0(O)XD1(O)]XD3(S)	[D0(O)@D0(W)]XD3(S)	[D0(O)σD1(S)]/D3(S)
[D0(W)XD3(O)]/D3(S)	[D0(W)@D1(O)]/D3(S)	[D0(W)σD3(S)]XD3(S)	[D0(O)XD1(O)]/D3(S)	[D0(O)@D0(W)]/D3(S)	[D0(O)σD2(W)]XD3(S)
[D0(W)XD3(S)]XD3(S) :	[D0(W)@D1(S)]XD3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD2(W)]XD3(S)	[D0(O)@D0(O)]XD3(S)	[D0(O)σD2(W)]/D3(S) :
[D0(W)XD3(S)]/D3(S)	[D0(W)@D1(S)]/D3(S)	[D0(W)+D0(W)]XD3(S) :	[D0(O)XD2(W)]/D3(S)	[D0(O)@D0(O)]/D3(S)	[D0(O)σD2(O)]XD3(S) :
[D0(W)/D0(W)]XD3(S) :	[D0(W)@D2(W)]XD3(S)	[D0(W)+D0(W)]/D3(S)	[D0(O)XD2(O)]XD3(S)	[D0(O)@D0(S)]XD3(S)	[D0(O)σD2(O)]/D3(S)
[D0(W)/D0(W)]/D3(S)	[D0(W)@D2(W)]/D3(S)	[D0(W)+D0(O)]XD3(S)	[D0(O)XD2(O)]/D3(S)	[D0(O)@D0(S)]/D3(S)	[D0(O)σD2(S)]XD3(S) :
[D0(W)/D0(O)]XD3(S)	[D0(W)@D2(O)]XD3(S)	[D0(W)+D0(O)]/D3(S)	[D0(O)XD2(S)]XD3(S)	[D0(O)@D1(W)]XD3(S)	[D0(O)σD2(S)]/D3(S) :
[D0(W)/D0(O)]/D3(S)	[D0(W)@D2(O)]/D3(S)	[D0(W)+D0(S)]XD3(S)	[D0(O)XD2(S)]/D3(S)	[D0(O)@D1(W)]/D3(S)	[D0(O)σD3(W)]XD3(S) :
[D0(W)/D0(S)]XD3(S)	[D0(W)@D2(S)]XD3(S)	[D0(W)+D1(W)]XD3(S) :	[D0(O)XD3(W)]XD3(S)	[D0(O)@D1(O)]XD3(S)	[D0(O)σD3(W)]/D3(S) :
[D0(W)/D0(S)]/D3(S) :	[D0(W)@D2(S)]/D3(S)	[D0(W)+D1(W)]/D3(S) :	[D0(O)XD3(W)]/D3(S)	[D0(O)@D1(O)]/D3(S)	[D0(O)σD3(O)]XD3(S) :
[D0(W)/D1(W)]XD3(S) :	[D0(W)@D3(W)]XD3(S)	[D0(W)+D1(O)]XD3(S)	[D0(O)XD3(O)]XD3(S)	[D0(O)@D2(W)]XD3(S)	[D0(O)σD3(S)]XD3(S) :
[D0(W)/D1(W)]/D3(S)	[D0(W)@D3(W)]/D3(S)	[D0(W)+D1(O)]/D3(S)	[D0(O)XD3(O)]/D3(S)	[D0(O)@D2(W)]/D3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(O)]XD3(S)	[D0(W)@D3(O)]XD3(S)	[D0(W)+D1(S)]XD3(S)	[D0(O)XD3(S)]XD3(S)	[D0(O)@D2(O)]XD3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(O)]/D3(S)	[D0(W)@D3(O)]/D3(S)				
[D0(W)/D1(S)]XD3(S)	[D0(W)@D3(S)]XD3(S)				
[D0(W)/D1(S)]/D3(S) :	[D0(W)@D3(S)]/D3(S)				
	[D0(W)σD0(W)]XD3(S)				

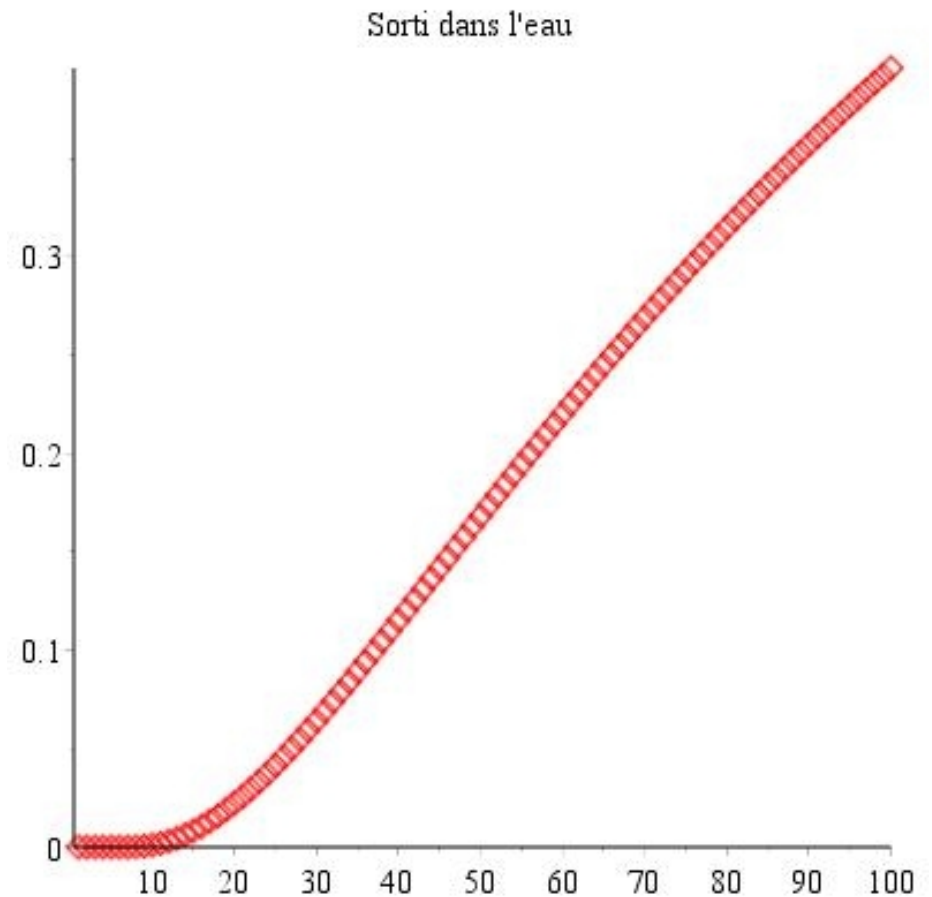
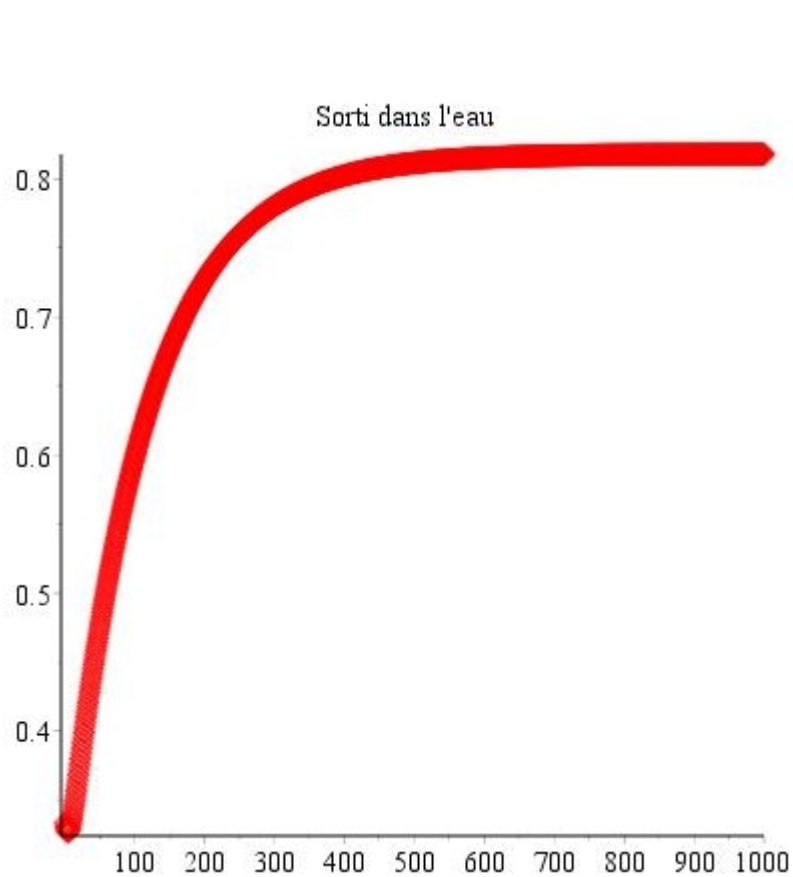
Et encore ici ...

[D0(W)XD0(W)]XD3(S) :	[D0(W)/D2(W)]XD3(S)	[D0(W)σD0(W)]/D3(S)	[D0(W)+D1(S)]/D3(S)	[D0(O)/D0(O)]XD3(S)	[D0(O)σD2(O)]/D3(S)
[D0(W)XD0(W)]/D3(S) :	[D0(W)/D2(W)]/D3(S)	[D0(W)σD0(O)]XD3(S)	[D0(W)+D2(W)]XD3(S)	[D0(O)/D0(O)]/D3(S)	[D0(O)@D2(S)]XD3(S) :
[D0(W)XD0(O)]XD3(S) :	[D0(W)/D2(O)]XD3(S)	[D0(W)σD0(O)]/D3(S)	[D0(W)+D2(W)]/D3(S)	[D0(O)/D0(S)]XD3(S) :	[D0(O)@D2(S)]/D3(S)
[D0(W)XD0(O)]/D3(S) :	[D0(W)/D2(O)]/D3(S)	[D0(W)σD0(S)]XD3(S)	[D0(W)+D2(O)]XD3(S)	[D0(O)/D0(S)]/D3(S)	[D0(O)@D3(W)]XD3(S)
[D0(W)XD0(S)]XD3(S) :	[D0(W)/D2(S)]XD3(S)	[D0(W)σD0(S)]/D3(S) :	[D0(W)+D2(O)]/D3(S)	[D0(O)/D1(W)]XD3(S)	[D0(O)@D3(W)]/D3(S) :
[D0(W)XD0(S)]/D3(S) :	[D0(W)/D2(S)]/D3(S)	[D0(W)σD1(W)]XD3(S) :	[D0(W)+D2(S)]XD3(S)	[D0(O)/D1(W)]/D3(S) :	[D0(O)@D3(O)]XD3(S) :
[D0(W)XD1(W)]XD3(S)	[D0(W)/D3(W)]XD3(S)	[D0(W)σD1(W)]/D3(S) :	[D0(W)+D2(S)]/D3(S)	[D0(O)/D1(O)]XD3(S) :	[D0(O)@D3(O)]/D3(S)
[D0(W)XD1(W)]/D3(S) :	[D0(W)/D3(W)]/D3(S)	[D0(W)σD1(O)]XD3(S) :	[D0(W)+D3(W)]XD3(S)	[D0(O)/D1(O)]/D3(S) :	[D0(O)@D3(S)]XD3(S) :
[D0(W)XD1(O)]XD3(S) :	[D0(W)/D3(O)]XD3(S)	[D0(W)σD1(O)]/D3(S) :	[D0(W)+D3(W)]/D3(S)	[D0(O)/D1(S)]XD3(S)	[D0(O)@D3(S)]/D3(S)
[D0(W)XD1(O)]/D3(S)	[D0(W)/D3(O)]/D3(S)	[D0(W)σD1(S)]XD3(S) :	[D0(W)+D3(O)]XD3(S)	[D0(O)/D1(S)]/D3(S) :	[D0(O)σD0(W)]XD3(S)
[D0(W)XD1(S)]XD3(S) :	[D0(W)/D3(S)]XD3(S)	[D0(W)σD1(S)]/D3(S)	[D0(W)+D3(O)]/D3(S)	[D0(O)/D2(W)]XD3(S) :	[D0(O)σD0(W)]/D3(S) :
[D0(W)XD1(S)]/D3(S)	[D0(W)/D3(S)]/D3(S)	[D0(W)σD2(S)]/D3(S)	[D0(W)+D3(S)]XD3(S)	[D0(O)/D2(W)]/D3(S)	[D0(O)σD0(O)]XD3(S)
[D0(W)XD2(W)]XD3(S)	[D0(W)@D0(W)]XD3(S)	[D0(W)σD2(W)]XD3(S)	[D0(W)+D3(S)]/D3(S)	[D0(O)/D2(O)]XD3(S)	[D0(O)σD0(O)]/D3(S) :
[D0(W)XD2(W)]/D3(S)	[D0(W)@D0(W)]/D3(S)	[D0(W)σD2(W)]/D3(S)	[D0(O)XD0(W)]XD3(S)	[D0(O)/D2(O)]/D3(S) :	[D0(O)σD0(S)]XD3(S) :
[D0(W)XD2(O)]XD3(S)	[D0(W)@D0(O)]XD3(S)	[D0(W)σD2(O)]XD3(S)	[D0(O)XD0(W)]/D3(S)	[D0(O)/D2(S)]XD3(S)	[D0(O)σD0(S)]/D3(S)
[D0(W)XD2(O)]/D3(S)	[D0(W)@D0(O)]/D3(S)	[D0(W)σD2(O)]/D3(S)	[D0(O)XD0(O)]XD3(S)	[D0(O)/D2(S)]/D3(S) :	[D0(O)σD1(W)]XD3(S)
[D0(W)XD2(S)]XD3(S)	[D0(W)@D0(S)]XD3(S)	[D0(W)σD2(S)]XD3(S)	[D0(O)XD0(O)]/D3(S)	[D0(O)/D3(W)]XD3(S) :	[D0(O)σD1(W)]/D3(S)
[D0(W)XD2(S)]/D3(S)	[D0(W)@D0(S)]/D3(S)	[D0(W)σD2(S)]/D3(S)	[D0(O)XD0(S)]XD3(S)	[D0(O)/D3(O)]XD3(S)	[D0(O)σD1(O)]XD3(S)
[D0(W)XD3(W)]XD3(S)	[D0(W)@D1(W)]XD3(S)	[D0(W)σD3(W)]XD3(S)	[D0(O)XD0(S)]/D3(S)	[D0(O)/D3(S)]XD3(S) :	[D0(O)σD1(S)]XD3(S) :
[D0(W)XD3(W)]/D3(S) :	[D0(W)@D1(W)]/D3(S)	[D0(W)σD3(W)]/D3(S)	[D0(O)XD1(W)]XD3(S)	[D0(O)/D3(S)]/D3(S) :	[D0(O)σD1(S)]/D3(S)
[D0(W)XD3(O)]XD3(S)	[D0(W)@D1(O)]XD3(S)	[D0(W)σD3(O)]XD3(S)	[D0(O)XD1(W)]/D3(S)	[D0(O)@D0(W)]XD3(S)	[D0(O)σD2(W)]XD3(S)
[D0(W)XD3(O)]/D3(S)	[D0(W)@D1(O)]/D3(S)	[D0(W)σD3(O)]/D3(S)	[D0(O)XD1(O)]XD3(S)	[D0(O)@D0(W)]/D3(S)	[D0(O)σD2(W)]/D3(S) :
[D0(W)XD3(S)]XD3(S) :	[D0(W)@D1(S)]XD3(S)	[D0(W)σD3(S)]XD3(S)	[D0(O)XD1(O)]/D3(S)	[D0(O)@D0(O)]XD3(S)	[D0(O)σD2(O)]XD3(S) :
[D0(W)XD3(S)]/D3(S)	[D0(W)@D1(S)]/D3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD1(S)]XD3(S)	[D0(O)@D0(O)]/D3(S)	[D0(O)σD2(O)]/D3(S)
[D0(W)/D0(W)]XD3(S) :	[D0(W)@D2(W)]XD3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD1(S)]/D3(S)	[D0(O)@D0(S)]XD3(S)	[D0(O)σD2(S)]XD3(S) :
[D0(W)/D0(W)]/D3(S)	[D0(W)@D2(W)]/D3(S)	[D0(W)+D0(W)]XD3(S) :	[D0(O)XD2(W)]XD3(S)	[D0(O)@D0(S)]/D3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(O)]XD3(S)	[D0(W)@D2(O)]XD3(S)	[D0(W)+D0(W)]/D3(S)	[D0(O)XD2(W)]/D3(S)	[D0(O)@D0(S)]/D3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(O)]/D3(S)	[D0(W)@D2(O)]/D3(S)	[D0(W)+D0(O)]XD3(S)	[D0(O)XD2(O)]XD3(S)	[D0(O)@D1(W)]XD3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(S)]XD3(S)	[D0(W)@D2(S)]XD3(S)	[D0(W)+D0(O)]/D3(S)	[D0(O)XD2(O)]/D3(S)	[D0(O)@D1(W)]/D3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(S)]/D3(S) :	[D0(W)@D2(S)]/D3(S)	[D0(W)+D0(S)]XD3(S)	[D0(O)XD2(S)]XD3(S)	[D0(O)@D1(O)]XD3(S)	[D0(O)σD3(W)]XD3(S) :
[D0(W)/D1(W)]XD3(S) :	[D0(W)@D3(W)]XD3(S)	[D0(W)+D0(S)]/D3(S) :	[D0(O)XD2(S)]/D3(S)	[D0(O)@D1(O)]/D3(S)	[D0(O)σD3(W)]/D3(S) :
[D0(W)/D1(W)]/D3(S)	[D0(W)@D3(W)]/D3(S)	[D0(W)+D1(W)]XD3(S) :	[D0(O)XD3(W)]XD3(S)	[D0(O)@D1(S)]XD3(S)	[D0(O)σD3(O)]XD3(S) :
[D0(W)/D1(O)]XD3(S)	[D0(W)@D3(O)]XD3(S)	[D0(W)+D1(W)]/D3(S) :	[D0(O)XD3(W)]/D3(S)	[D0(O)@D1(S)]/D3(S)	[D0(O)σD3(O)]/D3(S)
[D0(W)/D1(O)]/D3(S)	[D0(W)@D3(O)]/D3(S)	[D0(W)+D1(O)]XD3(S)	[D0(O)XD3(O)]XD3(S)	[D0(O)@D2(W)]XD3(S)	[D0(O)σD3(S)]XD3(S) :
[D0(W)/D1(S)]XD3(S)	[D0(W)@D3(S)]XD3(S)	[D0(W)+D1(O)]/D3(S)	[D0(O)XD3(O)]/D3(S)	[D0(O)@D2(W)]/D3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(S)]/D3(S) :	[D0(W)@D3(S)]/D3(S)	[D0(W)+D1(S)]XD3(S)	[D0(O)XD3(S)]XD3(S)	[D0(O)@D2(O)]XD3(S)	[D0(O)σD3(S)]/D3(S)
	[D0(W)σD0(W)]XD3(S)		[D0(O)XD3(S)]/D3(S)		

Et finalement ici

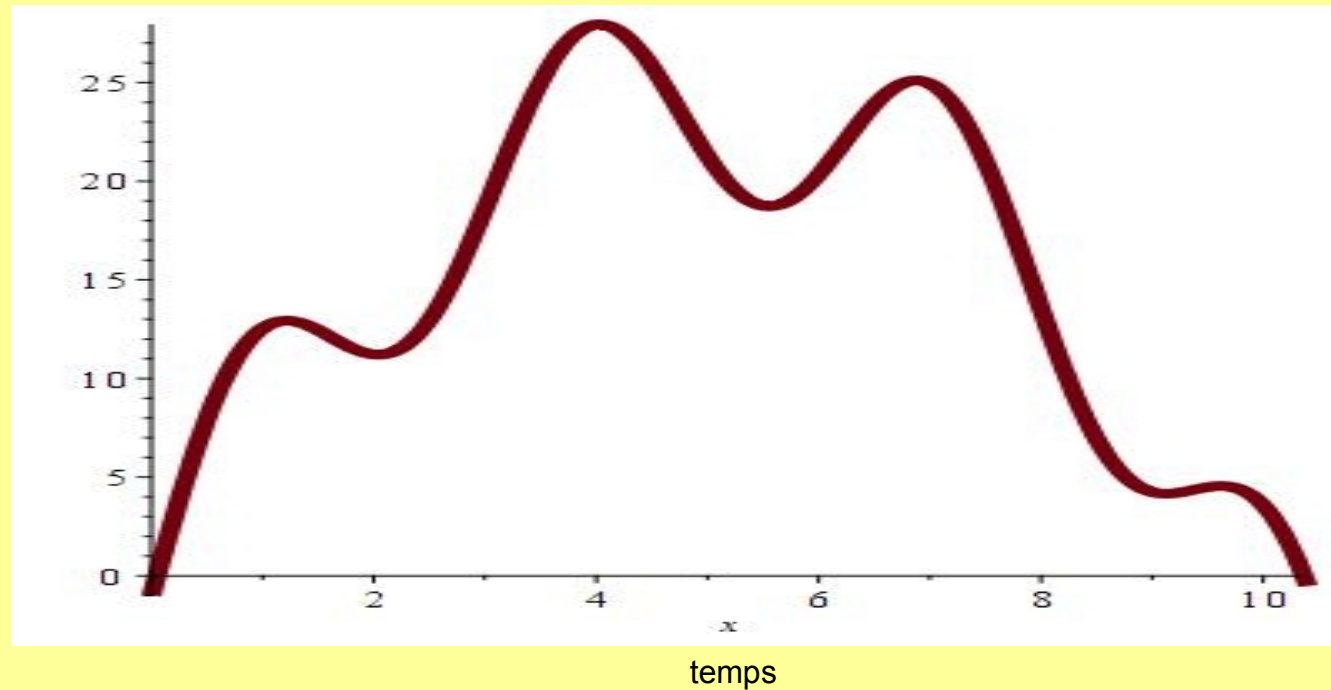
[D0(W)XD0(W)]XD3(S) :	[D0(W)/D2(W)]XD3(S)	[D0(W)σD0(W)]/D3(S)	[D0(W)+D1(S)]/D3(S)	[D0(O)/D0(O)]XD3(S)	[D0(O)@D2(O)]/D3(S)
[D0(W)XD0(W)]/D3(S) :	[D0(W)/D2(W)]/D3(S)	[D0(W)σD0(O)]XD3(S)	[D0(W)+D2(W)]XD3(S)	[D0(O)/D0(O)]/D3(S)	[D0(O)@D2(S)]XD3(S) :
[D0(W)XD0(O)]XD3(S) :	[D0(W)/D2(O)]XD3(S)	[D0(W)σD0(O)]/D3(S)	[D0(W)+D2(W)]/D3(S)	[D0(O)/D0(S)]XD3(S) :	[D0(O)@D2(S)]/D3(S)
[D0(W)XD0(O)]/D3(S)	[D0(W)/D2(O)]/D3(S)	[D0(W)σD0(S)]XD3(S)	[D0(W)+D2(O)]XD3(S)	[D0(O)/D0(S)]/D3(S)	[D0(O)@D3(W)]XD3(S)
[D0(W)XD0(S)]XD3(S) :	[D0(W)/D2(S)]XD3(S)	[D0(W)σD0(S)]/D3(S) :	[D0(W)+D2(O)]/D3(S)	[D0(O)/D1(W)]XD3(S)	[D0(O)@D3(W)]/D3(S) :
[D0(W)XD0(S)]/D3(S) :	[D0(W)/D2(S)]/D3(S)	[D0(W)σD1(W)]XD3(S) :	[D0(W)+D2(S)]XD3(S)	[D0(O)/D1(W)]/D3(S) :	[D0(O)@D3(O)]XD3(S) :
[D0(W)XD1(W)]XD3(S)	[D0(W)/D3(W)]XD3(S)	[D0(W)σD1(W)]/D3(S) :	[D0(W)+D2(S)]/D3(S)	[D0(O)/D1(O)]XD3(S) :	[D0(O)@D3(O)]/D3(S)
[D0(W)XD1(W)]/D3(S) :	[D0(W)/D3(W)]/D3(S)	[D0(W)σD1(O)]XD3(S) :	[D0(W)+D3(W)]XD3(S)	[D0(O)/D1(O)]/D3(S) :	[D0(O)@D3(S)]XD3(S) :
[D0(W)XD1(O)]XD3(S) :	[D0(W)/D3(O)]XD3(S)	[D0(W)σD1(O)]/D3(S) :	[D0(W)+D3(W)]/D3(S)	[D0(O)/D1(S)]XD3(S)	[D0(O)@D3(S)]/D3(S)
[D0(W)XD1(O)]/D3(S)	[D0(W)/D3(O)]/D3(S)	[D0(W)σD1(S)]XD3(S) :	[D0(W)+D3(O)]XD3(S)	[D0(O)/D1(S)]/D3(S) :	[D0(O)σD0(W)]XD3(S)
[D0(W)XD1(S)]XD3(S) :	[D0(W)/D3(S)]XD3(S)	[D0(W)σD1(S)]/D3(S)	[D0(W)+D3(O)]/D3(S)	[D0(O)/D2(W)]XD3(S) :	[D0(O)σD0(W)]/D3(S) :
[D0(W)XD1(S)]/D3(S)	[D0(W)/D3(S)]/D3(S)	[D0(W)σD2(W)]XD3(S)	[D0(W)+D3(S)]XD3(S)	[D0(O)/D2(W)]/D3(S)	[D0(O)σD0(O)]XD3(S)
[D0(W)XD2(W)]XD3(S)	[D0(W)@D0(W)]XD3(S)	[D0(W)σD2(W)]/D3(S)	[D0(W)+D3(S)]/D3(S)	[D0(O)/D2(O)]XD3(S)	[D0(O)σD0(O)]/D3(S) :
[D0(W)XD2(W)]/D3(S)	[D0(W)@D0(W)]/D3(S)	[D0(W)σD2(O)]XD3(S)	[D0(O)XD0(W)]XD3(S)	[D0(O)/D2(O)]/D3(S) :	[D0(O)σD0(S)]XD3(S) :
[D0(W)XD2(O)]XD3(S)	[D0(W)@D0(O)]XD3(S)	[D0(W)σD2(O)]/D3(S)	[D0(O)XD0(W)]/D3(S)	[D0(O)/D2(S)]XD3(S)	[D0(O)σD0(S)]/D3(S)
[D0(W)XD2(O)]/D3(S)	[D0(W)@D0(O)]/D3(S)	[D0(W)σD2(S)]XD3(S)	[D0(O)XD0(O)]XD3(S)	[D0(O)/D2(S)]/D3(S) :	[D0(O)σD1(W)]XD3(S)
[D0(W)XD2(S)]XD3(S)	[D0(W)@D0(S)]XD3(S)	[D0(W)σD2(S)]/D3(S)	[D0(O)XD0(O)]/D3(S)	[D0(O)/D3(W)]XD3(S) :	[D0(O)σD1(W)]/D3(S)
[D0(W)XD2(S)]/D3(S)	[D0(W)@D0(S)]/D3(S)	[D0(W)σD3(W)]XD3(S)	[D0(O)XD0(S)]XD3(S)	[D0(O)/D3(O)]XD3(S)	[D0(O)σD1(O)]XD3(S)
[D0(W)XD3(W)]XD3(S)	[D0(W)@D1(W)]XD3(S)	[D0(W)σD3(W)]/D3(S)	[D0(O)XD0(S)]/D3(S)	[D0(O)/D3(S)]XD3(S) :	[D0(O)σD1(O)]/D3(S)
[D0(W)XD3(W)]/D3(S) :	[D0(W)@D1(W)]/D3(S)	[D0(W)σD3(O)]XD3(S)	[D0(O)XD1(W)]XD3(S)	[D0(O)/D3(S)]/D3(S) :	[D0(O)σD1(S)]XD3(S) :
[D0(W)XD3(O)]XD3(S)	[D0(W)@D1(O)]XD3(S)	[D0(W)σD3(O)]/D3(S)	[D0(O)XD1(W)]/D3(S)	[D0(O)@D0(W)]XD3(S)	[D0(O)σD1(S)]/D3(S)
[D0(W)XD3(O)]/D3(S)	[D0(W)@D1(O)]/D3(S)	[D0(W)σD3(S)]XD3(S)	[D0(O)XD1(O)]XD3(S)	[D0(O)@D0(W)]/D3(S)	[D0(O)σD2(W)]XD3(S)
[D0(W)XD3(S)]XD3(S) :	[D0(W)@D1(S)]XD3(S)	[D0(W)σD3(S)]/D3(S)	[D0(O)XD1(O)]/D3(S)	[D0(O)@D0(O)]XD3(S)	[D0(O)σD2(W)]/D3(S) :
[D0(W)XD3(S)]/D3(S)	[D0(W)@D1(S)]/D3(S)	[D0(W)+D0(W)]XD3(S) :	[D0(O)XD1(S)]XD3(S)	[D0(O)@D0(O)]/D3(S)	[D0(O)σD2(O)]XD3(S) :
[D0(W)/D0(W)]XD3(S) :	[D0(W)@D2(W)]XD3(S)	[D0(W)+D0(W)]/D3(S)	[D0(O)XD2(W)]XD3(S)	[D0(O)@D0(S)]XD3(S)	[D0(O)σD2(O)]/D3(S)
[D0(W)/D0(W)]/D3(S)	[D0(W)@D2(W)]/D3(S)	[D0(W)+D0(O)]XD3(S)	[D0(O)XD2(W)]/D3(S)	[D0(O)@D0(S)]/D3(S)	[D0(O)σD2(S)]XD3(S) :
[D0(W)/D0(O)]XD3(S)	[D0(W)@D2(O)]XD3(S)	[D0(W)+D0(O)]/D3(S)	[D0(O)XD2(O)]XD3(S)	[D0(O)@D1(W)]XD3(S)	[D0(O)σD2(S)]/D3(S) :
[D0(W)/D0(O)]/D3(S)	[D0(W)@D2(O)]/D3(S)	[D0(W)+D0(S)]XD3(S)	[D0(O)XD2(O)]/D3(S)	[D0(O)@D1(W)]/D3(S)	[D0(O)σD2(S)]/D3(S)
[D0(W)/D0(S)]XD3(S)	[D0(W)@D2(S)]XD3(S)	[D0(W)+D0(S)]/D3(S) :	[D0(O)XD2(S)]XD3(S)	[D0(O)@D1(O)]XD3(S)	[D0(O)σD3(W)]XD3(S) :
[D0(W)/D0(S)]/D3(S) :	[D0(W)@D2(S)]/D3(S)	[D0(W)+D1(W)]XD3(S) :	[D0(O)XD2(S)]/D3(S)	[D0(O)@D1(O)]/D3(S)	[D0(O)σD3(W)]/D3(S) :
[D0(W)/D1(W)]XD3(S) :	[D0(W)@D3(W)]XD3(S)	[D0(W)+D1(W)]/D3(S) :	[D0(O)XD3(W)]XD3(S)	[D0(O)@D1(S)]XD3(S)	[D0(O)σD3(O)]XD3(S) :
[D0(W)/D1(W)]/D3(S)	[D0(W)@D3(W)]/D3(S)	[D0(W)+D1(O)]XD3(S)	[D0(O)XD3(W)]/D3(S)	[D0(O)@D1(S)]/D3(S)	[D0(O)σD3(O)]/D3(S) :
[D0(W)/D1(O)]XD3(S)	[D0(W)@D3(O)]XD3(S)	[D0(W)+D1(O)]/D3(S)	[D0(O)XD3(O)]XD3(S)	[D0(O)@D2(W)]XD3(S)	[D0(O)σD3(S)]XD3(S) :
[D0(W)/D1(O)]/D3(S)	[D0(W)@D3(O)]/D3(S)	[D0(W)+D1(S)]XD3(S)	[D0(O)XD3(O)]/D3(S)	[D0(O)@D2(W)]/D3(S)	[D0(O)σD3(S)]/D3(S)
[D0(W)/D1(S)]XD3(S)	[D0(W)@D3(S)]XD3(S)		[D0(O)XD3(S)]XD3(S)	[D0(O)@D2(O)]XD3(S)	
[D0(W)/D1(S)]/D3(S) :	[D0(W)@D3(S)]/D3(S)				
	[D0(W)σD0(W)]XD3(S)				

Des goûts différents



Peut-on faire un tel gel ?

Quantité de composé bioactif libérée



Oui



A table, saler à nouveau ?



I.

**La communication nutritionnelle
en vue des réductions du sel :
retour sur 25 ans d'efforts. Avec
quels résultats ?**

**Clémentine Hugol-Gential,
Université de Bourgogne, Dijon**

II.

**Des IRM pour étudier le sel dans
les aliments**

**Sylvie Clerjon, Jean-Marie Bonny
INRAE, PROBE/AgroResonance,
QuaPA, F-63122 St Genes
Champanelle**

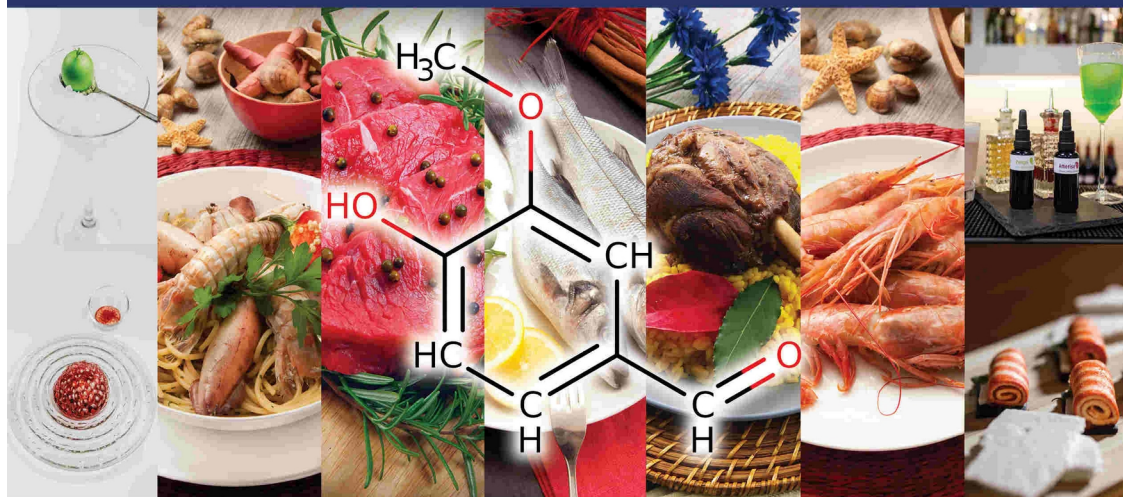
III.

**Utiliser les données de
physiologie sensorielle modernes
pour augmenter la perception du
sel dans les aliments**

**Thierry Thomas-Danguin, Centre
européen du goût, Dijon**

HANDBOOK OF MOLECULAR GASTRONOMY

Scientific Foundations, Educational Practices,
and Culinary Applications



edited by

**Róisín Burke • Alan Kelly • Christophe Lavelle
Hervé This vo Kientza**

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Vive la chimie !

