

Fig.1

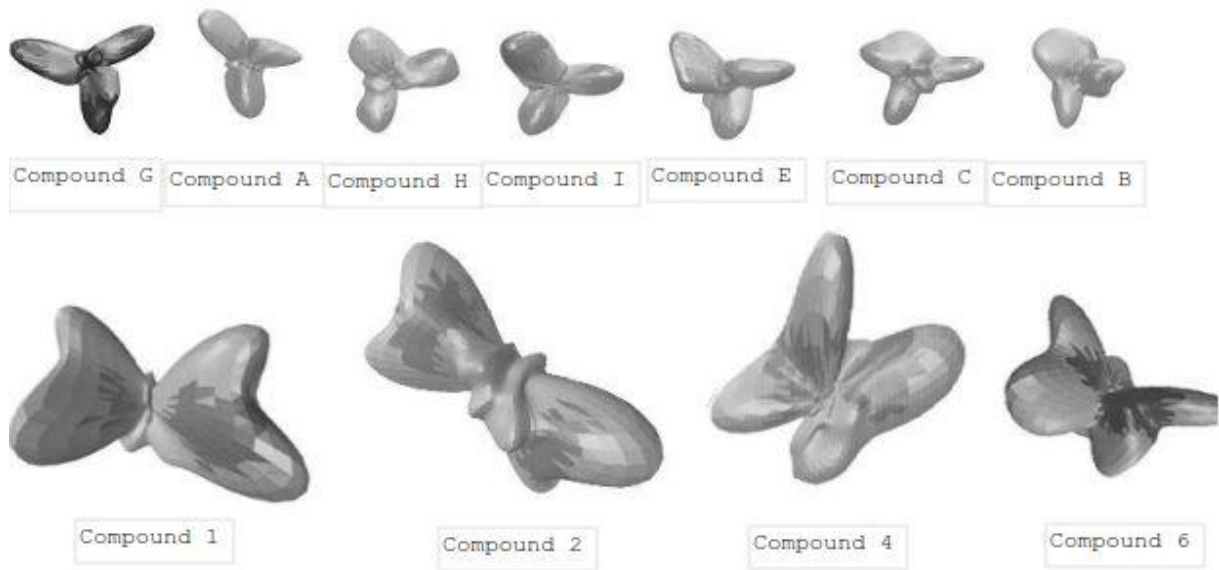


Fig. 2

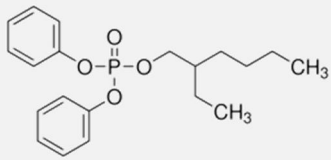
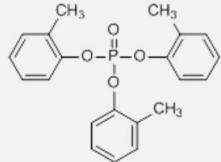
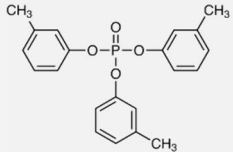
| Compound                    | ECHA's official data      | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Spherical harmonic cluster | QSAR neuro-toxicity (%) | QSAR repro-toxicity (%) | Risk level | Chemical structure                                                                   |
|-----------------------------|---------------------------|-------------------------------|---------------------------------|----------------------------|-------------------------|-------------------------|------------|--------------------------------------------------------------------------------------|
| <b>Comparative examples</b> |                           |                               |                                 |                            |                         |                         |            |                                                                                      |
| Compound A                  | No CMR, no acute toxicity | 12.7                          | 0.7                             | Cluster 1                  | 0.39                    | 1.93                    | 4          |   |
| Compound B                  | Not registrated           | 15                            | 3.7                             | Cluster 1                  | 7.35                    | 6.28                    | 5          |   |
| Compound C                  | Not registrated           | 9.3                           | 2.3                             | Cluster 1                  | 6.99                    | 3.69                    | 5          |  |

Fig.3

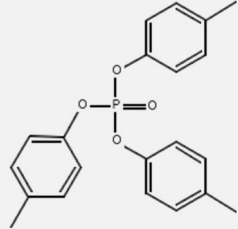
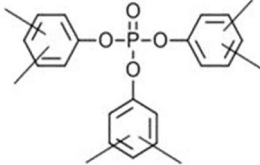
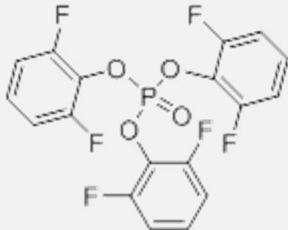
| Compound   | Données officielles ECHA                         | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%) | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                 |
|------------|--------------------------------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|-------------------------|------------------|--------------------------------------------------------------------------------------|
| Compound D | Not registrated                                  | 9.7                           | 42.7                            | Cluster 1                      | 8.36                    | 0.74                    | 3                |   |
| Compound P | PBT in évaluation*<br>Reprotoxic (Cat 2; H361)   | 16.9                          | 0.7                             | Cluster 1                      | Yes                     | Yes                     | 4                | Mixture of tricrésylphosphate isomers (Durad 125)                                    |
| Compound E | PBT in évaluation*<br>Reprotoxic (Cat 1b, H360f) | ND                            | ND                              | Cluster 1                      | 2.23                    | 1.41                    | ≥2               |   |
| Compound F | Not registrated                                  | 5.6                           | 8.7                             | Cluster 1                      | ND                      | ND                      | ≥3               |  |

Fig.4

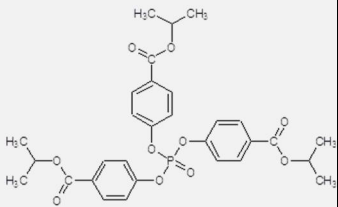
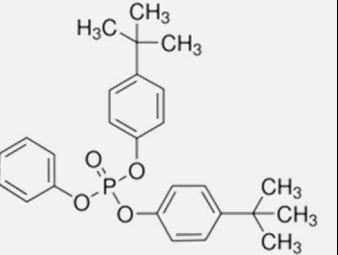
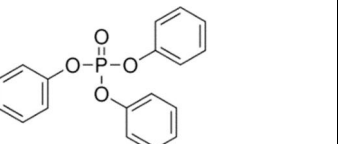
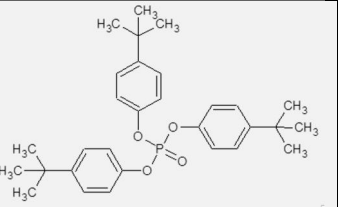
| Compound    | Données officielles ECHA  | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%) | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|-------------|---------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|-------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound G  | Not registrated           | 15.8                          | 145.5                           | Cluster 1                      | 0.05                    | 5.56                    | 2                |    |
| Compound H  | Not registrated           | 12.1                          | 122.8                           | Cluster 1                      | 0.02                    | 3.49                    | 3                |    |
| Compound I1 | No CMR, no acute toxicity | 10.8                          | 14.0                            | Cluster 1                      | 1.01                    | 1.22                    | 4                |   |
| Compound I2 | Not registrated           | 8.4                           | 96                              | Cluster 1                      | 0.32                    | 1.74                    | 3                |  |

Fig.5

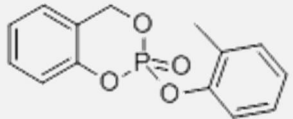
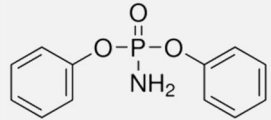
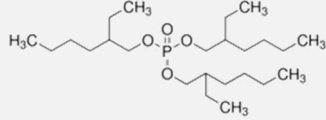
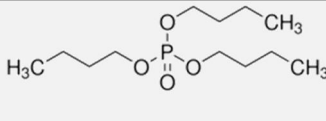
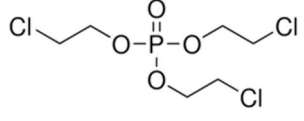
| Compound    | Données officielles ECHA                     | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%)              | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|-------------|----------------------------------------------|-------------------------------|---------------------------------|--------------------------------|--------------------------------------|-------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound I3 | No CMR, no acute toxicity                    | 13.9                          | 34.9                            | Cluster 1                      | NA : mixture of neurotoxic compounds | -                       | ≥3               | Mixture of derivatives of I1                                                          |
| Compound J  | Not registrated                              | ND                            | 0.7                             | Cluster 2                      | 5.61                                 | 1.67                    | ≥3               |    |
| Compound K  | Not registrated                              | 9.5                           | 33.9                            | Cluster 2                      | 1.13                                 | 4.4                     | 4                |    |
| Compound L  | No CMR, no acute toxicity                    | 12.2                          | 121                             | Cluster 5                      | 0                                    | 0.26                    | 2                |    |
| Compound M  | Carcinogenic Cat 3; R40 (GHS: Cat. 2, H 341) | 7.9                           | 21                              | Cluster 5                      | 9.98                                 | 0.23                    | 3                |  |
| Compound N  | Carcinogenic Reprotoxic                      | 8.2                           | 89.8                            | Cluster 5                      | 0.59                                 | 29.8                    | 4                |  |

Fig.6

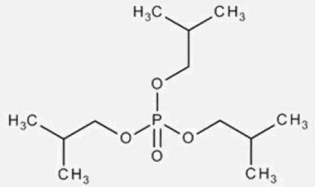
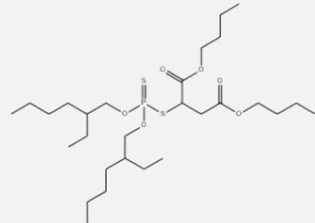
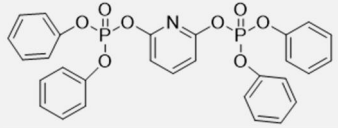
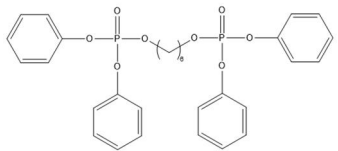
| Compound   | Données officielles ECHA  | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neurotoxicité (%) | QSAR reprotoxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|------------|---------------------------|-------------------------------|---------------------------------|--------------------------------|------------------------|------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound Q | No CMR, no acute toxicity | 9.4                           | 12.8                            | Cluster 5                      | 26.31                  | 1.82                   | 4                |    |
| Compound R | No CMR, no acute toxicity | 19.3                          | 11.1                            | ND                             | ND                     | ND                     | ≥1               |    |
| Compound S | Not registrated           | 2.9                           | 0.01                            | Cluster 3                      | 0.32                   | 0.04                   | 3                |   |
| Compound U | Not registrated           | 21.6                          | 1.2                             | ND                             | ND                     | ND                     | ≥1               |  |

Fig.7

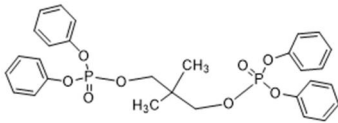
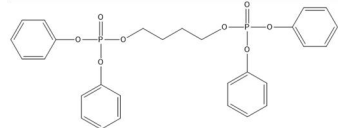
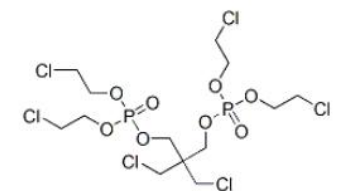
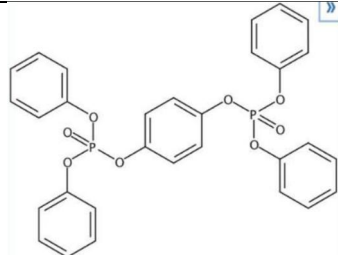
| Compound                                    | Données officielles ECHA  | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%) | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|---------------------------------------------|---------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|-------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound T                                  | Not registrated           | 17.8                          | 1.8                             | Cluster 3                      | 0.02                    | 0.1                     | 1                |    |
| Compound V                                  | Not registrated           | 23.8                          | 1.3                             | ND                             | ND                      | ND                      | ≥1               |    |
| Compound W                                  | No CMR, no acute toxicity | ND                            | ND                              | Cluster 4                      | 91                      | 0.19                    | ≥2               |    |
| <b>Compounds according to the invention</b> |                           |                               |                                 |                                |                         |                         |                  |                                                                                       |
| Compound 1                                  | ND                        | 24.1                          | 107                             | Cluster 3                      | 0.09                    | 0.08                    | 0                |  |

Fig.8

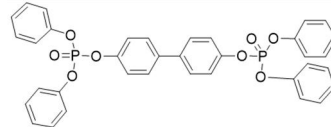
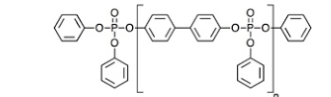
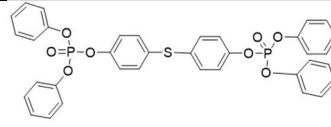
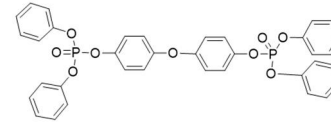
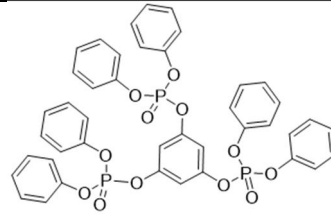
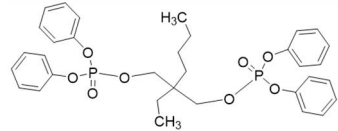
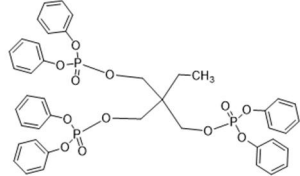
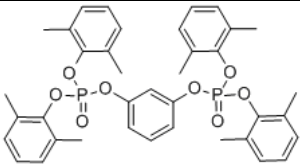
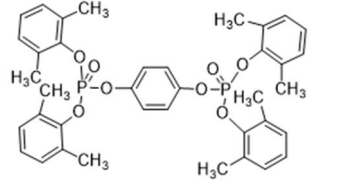
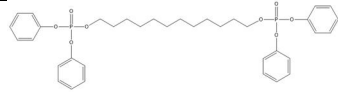
| Compound   | Données officielles ECHA  | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%) | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|------------|---------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|-------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound 2 | No CMR, no acute toxicity | 25 (n=1)                      | 101 (n=1)                       | Cluster 3                      | 0                       | 0.12                    | 0                |    |
|            |                           | 83 (n=1.5)                    | 159 (n=1.5)                     |                                |                         |                         |                  |    |
| Compound 3 | Not registrated           | 23.2                          | 113.2                           | Cluster 3                      | 0                       | 0.04                    | 0                |    |
| Compound 4 | Not registrated           | 22.6                          | 78.6                            | Cluster 3                      | 0                       | 0.09                    | 0                |   |
| Compound 5 | Not registrated           | 22.7                          | 82.6                            | Cluster 3                      | 0.10                    | 0.50                    | 0                |  |

Fig.9

| Compound    | Données officielles ECHA  | IC <sub>50</sub> hAChE (mg/L) | IC <sub>50</sub> eqBuChE (mg/L) | Cluster harmoniques sphériques | QSAR neuro-toxicité (%) | QSAR repro-toxicité (%) | Niveau de risque | Structures chimiques                                                                  |
|-------------|---------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|-------------------------|------------------|---------------------------------------------------------------------------------------|
| Compound 6  | Not registrated           | 16.4                          | 58.5                            | Cluster 3                      | 0                       | 0,52                    | 0                |    |
| Compound 7  | Not registrated           | 18.3                          | 120.2                           | Cluster 3                      | 0                       | 0                       | 0                |    |
| Compound 8  | No CMR, no acute toxicity | 26.3                          | 94.7                            | Cluster 3                      | 0.08                    | 0.71                    | 0                |    |
| Compound 9  | Not registrated           | 30                            | 107                             | Cluster 3                      | 0.12                    | 0.9                     | 0                |   |
| Compound 10 | Not registrated           | 27                            | 97                              | Cluster 3                      | 0.49                    | 2.04                    | 0                |  |

ND means not determined.

NA: means not applied (in case of mixtures of compounds)

\*PBT : Persistent, Bioaccumulative et toxic