**Table 1.** IC50 (mg/L) and EC50 (mg/L) values determined from the effects of AIas and AIfs on the activities of enzyme-based assay systems and *P. phosphoreum* bioluminescence.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ****Assay System**** | | | ****Fenvalerate**** | | ****Deltamethrin**** | | ****Cypermethrin**** | |
| **AIa** | **AIf**  **Sempay** | **AIa** | **AIf**  **Delcid** | **AIa** | **AIf**  **Briz** |
|
| ****In Vitro Assay Systems**** | ****Single-Enzyme Assay Systems**** | ****Trypsin**** | **x** | **\*** | **x** | **–** | **–** | **\*** |
| ****ALP**** | **x** | **\*** | **x** | **–** | **–** | **–** |
| ****BChE**** | **120 ± 30** | **-** | **100 ± 25** | **0.76 ± 0.15** | **–** | **30930 ± 9200** |
| ****LDH**** | **3 ± 0.6** | **0.2 ± 0.04** | **30 ± 7.4** | **6.2 ± 1.9** | **25 ± 6.3** | **150 ± 42** |
| ****ADH**** | **–** | **\*** | **10.4 ± 2.5** | **16.7 ± 4.2** | **0.2 ± 0.04** | **100 ± 23** |
| ****Multi-Enzyme Assay Systems**** | ****Red**** | **–** | **\*** | **–** | **146 ± 43** | **–** | **300 ± 81** |
| ****Red + Luc**** | **4.8 ± 1.2** | **0.0014 ± 0.00028** | **3.7 ± 0.8** | **39.5 ± 11.9** | **1.8 ± 0.45** | **5.0 ± 1.45** |
| ****ADH + Red + Luc**** | **1.6 ± 0.4** | **0.0006 ± 0.00015** | **1.0 ± 0.3** | **12.7 ± 3.3** | **0.2 ± 0.06** | **3.0 ± 0.87** |
| ****LDH + Red + Luc**** | **31.7 ± 7.9** | **0.0007 ± 0.00014** | **7.7 ± 1.8** | **11.5 ± 2.7** | **6.5 ± 1.5** | **1.0 ± 0.32** |
| ****In Vivo Assay System**** | | *****P. phosphoreum***** | **–** | **\*** | **–** | **\*** | **–** | **\*** |
| ****MRL RUS mg/kg**** [1] | | | **0.02-0.1** |  | **0.01-0.3** |  | **0.01-2.0** |  |

**Table 1 Continued.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ****Assay System**** | | | ****Imidacloprid**** | | | |
| **AIa** | **AIf** | | |
| ****Biotlin**** | ****Corado**** | ****Confidor****  ****Extra**** |
| ****In Vitro Assay Systems**** | ****Single-Enzyme Assay Systems**** | ****Trypsin**** | **–** | **\*** | **\*** | – |
| ****ALP**** | **–** | **\*** | **\*** | \* |
| ****BChE**** | **–** | **200 ± 64** | **–** | **80000 ± 20800** |
| ****LDH**** | **–** | **–** | **180 ± 52.2** | **1 ± 0.22** |
| ****ADH**** | **–** | **0.17 ± 0.05** | **0.08 ± 0.017** | 49.9 **± 15.5** |
| ****Multi-Enzyme Assay Systems**** | ****Red**** | **–** | **0.09 ± 0.0018** | **–** | 14.9 **± 3.7** |
| ****Red + Luc**** | **–** | **0.003 ± 0.00057** | **0.07 ± 0.0175** | **34.4 ± 9.3** |
| ****ADH + Red + Luc**** | **–** | **0.006 ± 0.00132** | 0.04 **± 0.012** | 47.8 **± 13.4** |
| ****LDH + Red + Luc**** | **–** | **0.01 ± 0.003** | 0.04 **± 0.008** | 1.9 **± 0.48** |
| ****In Vivo Assay System**** | | *****P. phosphoreum***** | **–** | **2000 ± 620** | 500 **± 150** | 110 **± 33** |
| ****MRL RUS mg/kg**** [1] | | | **0.1-1.0** |  | | |

**Table 1 Continued.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ****Assay System**** | | | ****Malathion**** | | ****Diazinon**** | | ****Glyphosate**** | | |
| **AIa** | **AIf**  **Aliot** | **AIa** | **AIf**  **Muravyed** | **AIa** | **AIf**  **Liquidator** | **AIf**  **Tornado**  **Extra** |
|
| ****In Vitro Assay Systems**** | ****Single-Enzyme Assay Systems**** | ****Trypsin**** | **\*** | **\*** | **\*** | \* | **962 ± 318** | **5400 ± 1890** | **2400 ± 672** |
| ****ALP**** | **\*** | **\*** | **\*** | \* | **1080 ± 324** | **600 ± 162** | **220 ±** **59** |
| ****BChE**** | **600 ± 162** | **4.0 ± 0.96** | **–** | 20.0 **± 5.4** | **35.0 ± 9.5** | **1000 ± 260** | **2.4 ± 0.6** |
| ****LDH**** | **350 ± 102** | **30 ± 8.7** | **–** | 0.05 **± 0.011** | **–** | **6000 ± 1560** | **52 ± 13.5** |
| ****ADH**** | **\*** | **\*** | **14.5 ± 3.77** | 0.2 **± 0.06** | **5140 ± 1799** | **1.5 ± 0.45** | **2.1 ±** **0.61** |
| ****Multi-Enzyme Assay Systems**** | ****Red**** | **\*** | **\*** | **\*** | \* | **–** | **9.0 ± 2.6** | **5.0 ±** **1.45** |
| ****Red + Luc**** | **\*** | **0.1 ± 0.03** | **2234 ± 670** | 0.009 **± 0.0018** | **288 ± 72** | **1.11 ± 0.38** | **1.8 ± 0.48** |
| ****ADH + Red + Luc**** | **\*** | **0.05 ± 0.01** | **11 ± 3.0** | 0.01 **± 0.0029** | **3200 ± 1056** | **1.4 ± 0.46** | **2.0 ± 0.64** |
| ****LDH + Red + Luc**** | **\*** | **0.014 ± 0.003** | **3351 ± 1105** | 0.005 **± 0.0014** | **935 ± 318** | **1.1 ± 0.3** | **3.3 ± 1.16** |
| ****In Vivo Assay System**** | | *****P. phosphoreum***** | **–** | **\*** | **–** | \* | **–** | **400 ± 140** | **400 ± 152** |
| ****MRL RUS mg/kg**** [1] | | | **0.05-1.0** | | **0.1-0.5** | | **0.1-5.0** | | |

«\*» The parameter could not be determined because of physico-chemical properties of the AIa and AIf or interaction of the AIa and AIf with the reaction mixture components.

«–» No inhibitory effect of the AIa and AIf was detected in the tested concentration range.

«x» A stimulating effect of the active ingredient on parameters of assay systems was observed in the tested concentration range.

[1] *SanPiN 1.2.3685‐21*; Hygienic Standards and Requirements for Ensuring the Safety and (or) Harmlessness of Environmental Factors for Humans (for Russian Federation). 2021. Approved by the resolution of the Chief state sanitary physician of the Russian Federation of 28.01.2021 N 2. Russia, Moscow.