附表1 AOP wiki 上目前列出的与农药相关的AOPs

Table S1 AOPs related to pesticides currently listed on the AOP wiki

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| --- | --- | --- | --- | --- | --- |
| 毒性分类Toxicity classification | AOP名称AOP name | AOP 编号AOP code | AOP状态AOP OECD status | 农药Pesticides | 农药作为该AOP应激源的证据强度水平AOP stressor evidence level |
| 神经毒性 neurotoxicity | 与离子型GABA受体印防己毒素位点结合导致成人癫痫发作Binding to the picrotoxin site of ionotropic GABA receptors leading to epileptic seizures in adult brain | 10 | TFHA/WNT 认可TFHA/WNT Endorsed | 印防己毒素Picrotoxin  | 高high |
| 芬普尼Fipronil | 高high |
| 林丹Lindane | 高high |
| 狄氏剂Dieldrin | 高high |
| 硫丹Endosulfan  | 高high |
| 七氯Heptachlor | 高high |
| 黑质纹状体神经元线粒体复合体I的抑制导致帕金森病运动障碍Inhibition of the mitochondrial complex I of nigro-striatal neurons leads to parkinsonian motor deficits | 3 | TFHA/WNT 认可TFHA/WNT Endorsed | 鱼藤酮Rotenone | 高high |
| 谷氨酸门控氯离子通道激活导致神经传递抑制相关的死亡Glutamate-gated chloride channel activation leading to neurotransmission inhibition associated mortality | 161 | 未知NA | 埃玛菌素Emamectin苯甲酸酯benzoate | 中等moderate |
| 离子型γ-氨基丁酸受体激活介导的神经传递抑制导致死亡Ionotropic gamma-aminobutyric acid receptor activation mediated neurotransmission inhibition leading to mortality | 160 | 未知NA | 埃玛菌素Emamectin 苯甲酸酯benzoate | 中等moderate |
| 甲状腺血清结合蛋白转甲状腺素的干扰及其对人类神经发育的不良影响Interference with thyroid serum binding protein transthyretin and subsequent adverse human neurodevelopmental toxicity | 152 | 在构建中Under Development | 绿草定Triclopyr | NA |
| 内分泌干扰endocrine disruption | 幼年激素受体激动诱导产生雄性后代导致种群减少Juvenile hormone receptor agonism leading to male offspring induction associated population decline | 201 | 未知NA | 苯虫醚DIOFENOLAN | 中等moderate |
| 苯氧威fenoxycarb | 中等moderate |
| 吡丙醚pyriproxyfen | 中等moderate |
| 烯虫乙酯(7S)-Hydroprene | 中等moderate |
| 烯虫炔酯kinoprene | 中等moderate |
| 蜕皮激素受体激动导致不完全蜕皮相关的死亡Ecdysone receptor agonism leading to incomplete ecdysis associated mortality | 4 | 未知NA | 虫酰肼Tebufenozide | 高high |
| 甲氧虫酰肼Methoxyfenozide | 高high |
| 氯虫酰肼Halofenozide | 高high |
| 环虫酰肼Chromafenozide | 高high |
| 磺酰脲受体结合导致死亡Sulfonylurea receptor binding leading to mortality | 343 | 未知NA | 氟苯脲Teflubenzuron | 中等moderate |
| 除虫脲Diflubenzuron | 中等moderate |
| 遗传毒性genotoxicity | 抑制剂与拓扑异构酶II结合导致婴儿白血病Inhibitor binding to topoisomerase II leading to infant leukaemia | 202 | EAGMST正在审查中EAGMST Under Review | 毒死蜱Chlorpyrifos | 低low |
| 卵母细胞微管蛋白的化学结合导致非整倍体后代Chemical binding to tubulin in oocytes leading to aneuploid offspring | 106 | EAGMST正在审查中EAGMST Under Review | 苯菌灵Benomyl | 高high |
| 致癌性carcinogenicity | 肝分解代谢甲状腺激素增强导致大鼠和小鼠甲状腺滤泡细胞腺瘤和癌Enhanced hepatic clearance of thyroid hormones leading to thyroid follicular cell adenomas and carcinomas in the rat and mouse | 162 | 未知NA | 噻唑烟酸Thiazopyr | 中等moderate |
| Pyrethrins and Pyrethroids除虫菊酯类和拟除虫菊酯类 | 中等moderate |
| GnRH脉冲破坏导致SD大鼠乳腺腺瘤和癌GnRH pulse disruption leading to mammary adenomas and carcinomas in the SD rat | 168 | 未知NA | 莠去津Atrazine | 中等moderate |
| GnRH脉冲破坏致SD大鼠垂体腺瘤和垂体癌GnRH pulse disruption leading to pituitary adenomas and carcinomas in the SD rat | 169 | 未知NA | 莠去津Atrazine | 中等moderate |
| 雄性激素受体激活导致小鼠和大鼠肝细胞腺瘤和癌Constitutive androstane receptor activation leading to hepatocellular adenomas and carcinomas in the mouse and the rat | 107 | EAGMST正在审查中EAGMST Under Review | 甲氧苄氟菊酯metofluthrin | 高high |
| 线粒体损伤引起的化学细胞毒性导致尿路上皮癌变AOP for urothelial carcinogenesis due to chemical cytotoxicity by mitochondrial impairment | 335 | 未知NA | 敌草隆Diuron | 中等moderate |
| 肝毒性hepatotoxicity | 芳香烃受体激活导致尿卟啉Aryl hydrocarbon receptor activation leading to uroporphyria | 131 | TFHA/WNT 认可TFHA/WNT Endorsed | 六氯苯Hexachlorobenzene | 高high |
| 肾毒性nephrotoxicity | 环氧合酶1（COX1）抑制导致肾功能衰竭和死亡Cyclooxygenase 1 (COX1) inhibition leading to renal failure and mortality | 177 | 未知NA | 氟尼辛葡甲胺Flunixin meglumine | 中等moderate |
| 循环系统毒性circulatory toxicity | 抗凝血灭鼠剂抑制维生素K环氧化物还原酶引起凝血和出血Anticoagulant rodenticide inhibition of vitamin K epoxide reductase resulting coagulopathy and hemorrhage | 187 | 在构建中Under Development | 氯灭鼠灵coumachlor | 中等moderate |
| 华法林Warfarin  | 中等moderate |
| 杀鼠醚coumatetralyl | 中等moderate |
| 氯鼠酮Chlorophacinone | 中等moderate |
| 敌鼠diphacinone | 中等moderate |
| 杀鼠酮pindone | 中等moderate |
| 运动系统毒性motor system toxicity | 赖氨酰氧化酶的抑制导致鱼类慢性毒性增加Inhibition of lysyl oxidase leading to enhanced chronic fish toxicity | 242 | 未知NA | 二甲基二硫代氨基甲酸盐Dimethyl dithiocarbamate | 中等moderate |
| 福美双Thiram | 高high |
| 福美铁Ferbam | 中等moderate |
| 棉隆Dazomet | 低low |
| 代森锰锌Mancozeb | 低low |
| 代森钠Nabam-sodium | 低low |
| 福美锌Ziram | 中等moderate |
| 代森锌Zineb | 低low |

注：EAGMST，经合组织分子筛选和毒理基因组学专家咨询小组；TFHA，危害评估工作组；WNT，测试指南计划国家协调员工作组；NA，未知。

Note: EAGMST , OECD Expert Advisory Group on Molecular Screening and Toxicogenomics; TFHA, Task Force for Hazard Assessment; WNT, Working Group of the National Coordinators for the Test Guidelines Programme; NA, Not Available.