Topic: Glyphosate formulations

NATURAL MEDICINE RESEARCH

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Glyphosate formulations

06/17/2013

Roundup (herbicide)
Glyphosate

What is Cumulative Knowledge, and Why Should it Interest Me?

Cumulative Knowledge is determined by ascribing a numerical value to all the articles indexed on our database. The GreenMedInfo.com algorithm appraises a study's overall evidentiary power and quality by generating a numerical value. This "Cumulative Knowledge" score incorporates variables such as study type, with the following types listed in descending order by their power: Meta-Analysis, Human Study, Human: Case Study, Animal:Transgenic, Animal, In Vitro, Review, and Commentary. The cumulative total will provide you an idea about the depth and quality of information that this topic has accumulated on our site. For instance, if you downloaded a document on "**Cancers: All**", you might see "**Curcumin**" with a **Cumulative Knowledge** of **677** and **Resveratrol** with a **Cumulative Knowledge** of **175**. This does not mean that **Curcumin** is better, but just that we have gathered more quality research on the Substance **Curcumin**.
Click here to read a more in depth explanation

How are Topics and Articles Sorted in this PDF?

Articles in this document are placed within their respective **Topic** category. If you download a document on the Disease "**Cancers: All**" and are interested in all articles pertaining to the Substance "**Curcumin**" with regard to "**Cancers: All**", you will find them under the "**Curcumin**" sub-section underneath the **Cumulative Knowledge** section . **Topics** are sorted based on their **Cumulative Knowledge** in relation to the main topic of the download. In the previous example, it would be in relation to "**Cancers: All**". Articles are then sorted based on the articles **Published Date**. **Articles** are sorted in a descending fashion, which means that the most recent articles are displayed first. **Articles** may appear more than once in this document. For each **Topic** that an **Article** contains, it will be displayed in that sub-section. For example, if an **Article** contains the **Substances** "**Pterostilbene**" and "**Resveratrol**", the article will be displayed under each **Topic**.

Related Topics

This Topic includes articles from the following related Topics : Glyphosate, Roundup (herbicide)

Quick Summary: 44 Diseases

Name	Cumulative Knowledge	Article Count
Lymphoma: Non-Hodgkin	40	4
DNA damage	37	15
Glyphosate Toxicity	29	16
Hormonal Disorders: Children	24	4
Testosterone: Too Low	22	4
Pesticide Toxicity	21	3
Hairy Leukoplakia	20	2

Lymphoma	20	2
Prenatal Chemical Exposures	19	13
Chemical Exposure	12	3
Multiple Myeloma	10	1
Rhinitis	10	1
Parkinsonian Disorders	8	4
Neurotoxicity	7	4
Endocrine Diseases	6	4
Liver Cancer	5	1
Chemical Poisoning: Accumulated Environmental Toxins	4	2
Dopamine Levels: Low	4	2
Infertility: Male	4	2
Lipid Peroxidation	4	3
Mercury Poisoning	4	2
Postnatal Care: Breastfeeding	4	2
Pregnancy: Environmental Exposures	4	2
Substantia Nigra: Damage	4	2
Botulism	3	3
Botulism: Infantile	3	3
Chemically-Induced Liver Damage	3	3
Meningitis: Aseptic	3	1
Neurodegenerative Diseases	3	2
Oxidative Stress	3	2
Parkinson Disease	3	3
Parkinsonism	3	1
Vaccine-induced Toxicity	3	1
Breast Cancer	2	2
Breast Cancer: Chemically-Induced	2	2
Breast Cancer: estrogen receptor alpha-positive	2	2
Cancers: All	2	2
Male Reproductive Development Abnormalities	2	1
Skin Cancer	2	2
Dysbiosis	1	1
Kidney Damage	1	1
Liver Damage	1	1
Lymphatic Cancer	1	1
Uranium Poisoning	1	1

Quick Summary: 26 Adverse Pharmacological Actions

Name	Cumulative Knowledge	Article Count
Genotoxic	51	22
Endocrine Disruptor	46	18
Carcinogen	42	6
Cytotoxic	26	15
Neurotoxic	26	12
Aquacidal	24	12
Biocide	12	7
Hepatotoxic	9	6
Bioaccumulator	7	4
Oxidant	6	4
Teratogenic	6	3
Clastogenic	5	1
Acetylcholinesterase inhibitor (xenobiotic)	4	2
Endocrine Disruptor: Testes	4	3
Mutagenic	4	4
Cell Cycle Inhibitor	3	3

Immunosuppressive	3	3
Necrotic	3	3
Apoptotic	2	2
Aromatase Disruptor	2	2
Carcinogenic	2	2
Estrogenic	2	2
Glutathione Down-Regulation	2	1
Glutathione S-transferase Inducer (xenobiotic)	2	1
Malondialdehyde (MDA) Up-Regulation	2	1
Nephrotoxic	1	1

Total Distinct Articles in this Document - 118

Category: Diseases

Topic: Lymphoma: Non-Hodgkin

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma and Hairy Cell leukemia. - GMI Summary

Pubmed Data : Leuk Lymphoma. 2002 May;43(5):1043-9. PMID: 12148884
Article Published Date : May 01, 2002
Authors : Lennart Hardell, Mikael Eriksson, Marie Nordstrom
Study Type : Human Study
Additional Links
Diseases : Hairy Leukoplakia : CK(10) : AC(2), Lymphoma : CK(209) : AC(69), Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma. - GMI Summary

Pubmed Data : Int J Cancer. 2008 Oct 1;123(7):1657-63. PMID: 18623080
Article Published Date : Oct 01, 2008
Authors : Mikael Eriksson, Lennart Hardell, Michael Carlberg, Måns Akerman
Study Type : Human Study
Additional Links
Diseases : Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Topic: DNA damage

There is evidence that there is a genotoxic risk potential associated with exposure to glyphosate in areas where the herbicide is applied. - GMI Summary

Pubmed Data : J Toxicol Environ Health A. 2009;72(15-16):986-97. PMID: 19672767
Article Published Date : Jan 01, 2009
Authors : C Bolognesi, G Carrasquilla, S Volpi, K R Solomon, E J P Marshall
Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Cytogenetic damage and induction of pro-oxidant state has been observed in human lymphocytes exposed in vitro to glyphosate. - GMI Summary

Pubmed Data : Environ Mol Mutagen. 1998 ;32(1):39-46. PMID: 9707097
Article Published Date : Jan 01, 1998
Authors : M B Lioi, M R Scarfi, A Santoro, R Barbieri, O Zeni, F Salvemini, D Di Berardino, M V Ursini
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

The environmental metabolite of glyphosate, Aminomethylphosphonic acid, exhibits genotoxicity. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Mar ;72(3):834-7. Epub 2008 Nov 14. PMID: 19013644
Article Published Date : Mar 01, 2009
Authors : F Mañas, L Peralta, J Raviolo, H García Ovando, A Weyers, L Ugnia, M Gonzalez Cid, I Larripa, N Gorla
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Liver Cancer : CK(1641) : AC(266)
Problem Substances : Aminomethylphosphonic acid : CK(12) : AC(5), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Clastogenic : CK(6) : AC(2), Genotoxic : CK(146) : AC(61)

Commercial glyphosate herbicides exhibit genotoxicity in fish. - GMI Summary

Pubmed Data : Mutagenesis. 2007 Jul;22(4):263-8. Epub 2007 Apr 10. PMID: 17426049
Article Published Date : Jul 01, 2007
Authors : Tolga Cavaş, Serpil Könen
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Environmentally relevant concentrations of Roundup can pose a health risk for fish populations. - GMI Summary

Pubmed Data : Mutagenesis. 2010 Sep ;25(5):523-30. Epub 2010 Jul 19. PMID: 20643706
Article Published Date : Aug 31, 2010
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Lipid Peroxidation : CK(403) : AC(127)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Fish exposed to a glyphosate-based herbicide undergo DNA damage. - GMI Summary

Pubmed Data : Mutat Res. 2012 Mar 18 ;743(1-2):1-9. Epub 2012 Jan 14. PMID: 22266476
Article Published Date : Mar 17, 2012
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Oxidative Stress : CK(1945) : AC(710)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Roundup is able to induce a dose-dependent formation of DNA adducts in the kidneys and liver of mice. - GMI Summary

Pubmed Data : Environ Mol Mutagen. 1998 ;31(1):55-9. PMID: 9464316
Article Published Date : Jan 01, 1998
Authors : M Peluso, A Munnia, C Bolognesi, S Parodi
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Glyphosate has genotoxic properties. - GMI Summary

Pubmed Data : Int J Hyg Environ Health. 2006 Jan ;209(1):15-20. Epub 2005 Aug 29. PMID: 16373198
Article Published Date : Jan 01, 2006
Authors : Katarína Siviková, Ján Dianovskỳ
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines at exceedingly small concentrations (.5 ppm to 10 ppm). - GMI Summary

Pubmed Data : Toxicology. 2009 Aug 21;262(3):184-91. Epub 2009 Jun 17. PMID: 19539684
Article Published Date : Aug 21, 2009
Authors : Céline Gasnier, Coralie Dumont, Nora Benachour, Emilie Clair, Marie-Christine Chagnon, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Additional Keywords : Estrogen Receptor Beta : CK(24) : AC(11)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81), Mutagenic : CK(22) : AC(11)

Glyphosate-based pesticides adversely affect cell cycle regulation at concentrations 500 to 4000 times lower than used in agriculatural applications. - GMI Summary

Pubmed Data : Biol Cell. 2004 Apr ;96(3):245-9. PMID: 15182708
Article Published Date : Apr 01, 2004
Authors : Julie Marc, Odile Mulner-Lorillon, Robert Bellé
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35), Genotoxic : CK(146) : AC(61)

Glyphosphate exhibits genotoxicity in human cells. - GMI Summary

Pubmed Data : Biomedica. 2005 Sep;25(3):335-45. PMID: 16276681
Article Published Date : Sep 01, 2005
Authors : Claudia Milena Monroy, Andrea Carolina Cortés, Diana Mercedes Sicard, Helena Groot de Restrepo
Study Type : In Vitro Study
Additional Links

Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Roundup herbicide is more toxic than its constituent parts and is genotoxic in concentrations that concentrations that correspond to a 450-fold dilution of spraying used in agriculture. - GMI Summary

Pubmed Data : Arch Toxicol. 2012 Feb 14. Epub 2012 Feb 14. PMID: 22331240

Article Published Date : Feb 14, 2012

Authors : Verena J Koller, Maria Fürhacker, Armen Nersesyan, Miroslav Mišík, Maria Eisenbauer, Siegfried Knasmueller

Study Type : In Vitro Study
Additional Links
Diseases : Cancers: All : CK(9062) : AC(2869), DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Topic: Glyphosate Toxicity

Acute glyphosate-surfactant poisoning with neurological sequels and fatal outcome - GMI Summary

Pubmed Data : Vojnosanit Pregl. 2009 Sep ;66(9):758-62. PMID: 19877558

Article Published Date : Sep 01, 2009

Authors : Olivera Potrebić, Jasmina Jović-Stosić, Slavica Vucinić, Jelena Tadić, Misel Radulac

Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760

Article Published Date : May 01, 2001

Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite

Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Measles vaccine and glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Arq Neuropsiquiatr. 2003 Jun ;61(2B):381-6. Epub 2003 Jul 28. PMID: 12894271

Article Published Date : Jun 01, 2003

Authors : Maria do Desterro Leiros da Costa, Lílian Regina Gonçalves, Egberto Reis Barbosa, Luiz Alberto Bacheschi

Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Parkinsonian Disorders : CK(15) : AC(4), Vaccine-induced Toxicity : CK(1130) : AC(163)
Anti Therapeutic Actions : Vaccination: Measles : CK(156) : AC(16)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Genotoxic effects of the herbicide Roundup(®) have been observed in the fish

species Corydoras paleatus after short-term, environmentally low concentration exposure. - GMI Summary

Pubmed Data : Environ Monit Assess. 2012 Jul 22. Epub 2012 Jul 22. PMID: 22821326

Article Published Date : Jul 21, 2012

Authors : Nédia de Castilhos Ghisi, Marta Margarete Cestari

Study Type : Animal Study, Environmental
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Ginkgo biloba protects against glyphosate toxicity in mice. - GMI Summary

Pubmed Data : J Med Food. 2011 Aug 22. Epub 2011 Aug 22. PMID: 21859351

Article Published Date : Aug 22, 2011

Authors : Kültiğin Cavuşoğlu, Kürşad Yapar, Ertan Oruç, Emine Yalçın

Study Type : Animal Study
Additional Links
Substances : Ginkgo biloba : CK(530) : AC(104)
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(4) : AC(2), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Glyphosate impairs male offspring reproductive development. - GMI Summary

Pubmed Data : Arch Toxicol. 2011 Nov 26. Epub 2011 Nov 26. PMID: 22120950

Article Published Date : Nov 26, 2011

Authors : Marco Aurelio Romano, Renata Marino Romano, Luciana Dalazen Santos, Patricia Wisniewski, Daniele Antonelo Campos, Paula Bargi de Souza, Priscila Viau, Maria Martha Bernardi, Maria Tereza Nunes, Claudio Alvarenga de Oliveira

Study Type : Animal Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52), Male Reproductive Development Abnormalities : CK(2) : AC(1), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)

Lipoic acid protects against the brain-damaging effects of pesticides in the rat brain. - GMI Summary

Pubmed Data : Neurochem Int. 2012 Sep 17. Epub 2012 Sep 17. PMID: 22995786

Article Published Date : Sep 16, 2012

Authors : Astiz Mariana, María J T de Alaniz, Marra Carlos Alberto

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(384) : AC(82)
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318), Neuroprotective Agents : CK(962) : AC(480)
Problem Substances : Glyphosate : CK(365) : AC(116)

Pesticide-induced decrease in rat testicular steroidogenesis is differentially prevented by lipoate and tocopherol. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2013 May ;91:129-38. Epub 2013 Mar 7. PMID: 23465731

Article Published Date : Apr 30, 2013

Authors : Mariana Astiz, Graciela E Hurtado de Catalfo, Marcela N García, Susana M Galletti, Ana L Errecalde, María J T de Alaniz, Carlos A Marra

Study Type : Animal Study

Additional Links
Substances : Alpha-Lipoic Acid : CK(384) : AC(82), Vitamin E: alpha tocopherol : CK(1287) : AC(222)
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

"A glyphosate-based herbicide induces necrosis and apoptosis in mature rat testicular cells in vitro, and testosterone decrease at lower levels." - GMI Summary

Pubmed Data : Toxicol In Vitro. 2011 Dec 19. Epub 2011 Dec 19. PMID: 22200534
Article Published Date : Dec 19, 2011
Authors : Emilie Clair, Robin Mesnage, Carine Travert, Gilles-Éric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Testosterone: Too Low : CK(369) : AC(70)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

A commercial formulation of glyphosate inhibits proliferation and differentiation to adipocytes and induces programmed cell death in 3T3-L1 fibroblasts. - GMI Summary

Pubmed Data : Toxicol In Vitro. 2012 Apr 21. Epub 2012 Apr 21. PMID: 22546541
Article Published Date : Apr 21, 2012
Authors : Claudia N Martini, Matías Gabrielli, María Del C Vila
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Cytotoxic : CK(73) : AC(35)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334
Article Published Date : Apr 01, 2012
Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis
Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)

Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Quercetin reverses glyphosate-induced changes in skin cells. - GMI Summary

Pubmed Data : J Struct Biol. 2012 Feb 17. Epub 2012 Feb 17. PMID: 22369932
Article Published Date : Feb 17, 2012
Authors : Celine Heu, Alexandre Berquand, Celine Elie-Caille, Laurence Nicod
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Hormonal Disorders: Children

Prepubertal exposure to commercial formulation of the herbicide glyphosate alters testosterone levels and testicular morphology. - GMI Summary

Pubmed Data : Arch Toxicol. 2010 Apr;84(4):309-17. Epub 2009 Dec 12. PMID: 20012598
Article Published Date : Apr 01, 2010
Authors : R M Romano, M A Romano, M M Bernardi, P V Furtado, C A Oliveira
Study Type : Human Study
Additional Links
Diseases : Hormonal Disorders: Children : CK(14) : AC(3), Pesticide Toxicity : CK(147) : AC(45), Testosterone: Too Low : CK(369) : AC(70)
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

The herbicide Roundup may cause disorder in the morphophysiology of the male genital system of animals. - GMI Summary

Pubmed Data : Reprod Toxicol. 2007 Feb;23(2):182-91. Epub 2006 Nov 11. PMID: 17166697
Article Published Date : Feb 01, 2007
Authors : André G Oliveira, Luiz F Telles, Rex A Hess, Germán A B Mahecha, Cleida A Oliveira
Study Type : Animal Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Hormonal Disorders: Children : CK(14) : AC(3)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Topic: Testosterone: Too Low

Prepubertal exposure to commercial formulation of the herbicide glyphosate alters testosterone levels and testicular morphology. - GMI Summary

Pubmed Data : Arch Toxicol. 2010 Apr;84(4):309-17. Epub 2009 Dec 12. PMID: 20012598
Article Published Date : Apr 01, 2010
Authors : R M Romano, M A Romano, M M Bernardi, P V Furtado, C A Oliveira
Study Type : Human Study
Additional Links
Diseases : Hormonal Disorders: Children : CK(14) : AC(3), Pesticide Toxicity : CK(147) : AC(45), Testosterone: Too Low : CK(369) : AC(70)
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

"A glyphosate-based herbicide induces necrosis and apoptosis in mature rat

testicular cells in vitro, and testosterone decrease at lower levels." - GMI Summary

Pubmed Data : Toxicol In Vitro. 2011 Dec 19. Epub 2011 Dec 19. PMID: 22200534
Article Published Date : Dec 19, 2011
Authors : Emilie Clair, Robin Mesnage, Carine Travert, Gilles-Éric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Testosterone: Too Low : CK(369) : AC(70)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

Topic: Pesticide Toxicity

Prepubertal exposure to commercial formulation of the herbicide glyphosate alters testosterone levels and testicular morphology. - GMI Summary

Pubmed Data : Arch Toxicol. 2010 Apr;84(4):309-17. Epub 2009 Dec 12. PMID: 20012598
Article Published Date : Apr 01, 2010
Authors : R M Romano, M A Romano, M M Bernardi, P V Furtado, C A Oliveira
Study Type : Human Study
Additional Links
Diseases : Hormonal Disorders: Children : CK(14) : AC(3), Pesticide Toxicity : CK(147) : AC(45), Testosterone: Too Low : CK(369) : AC(70)
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Topic: Hairy Leukoplakia

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma and Hairy Cell leukemia. - GMI Summary

Pubmed Data : Leuk Lymphoma. 2002 May;43(5):1043-9. PMID: 12148884
Article Published Date : May 01, 2002
Authors : Lennart Hardell, Mikael Eriksson, Marie Nordstrom
Study Type : Human Study
Additional Links
Diseases : Hairy Leukoplakia : CK(10) : AC(2), Lymphoma : CK(209) : AC(69), Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Topic: Lymphoma

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma and Hairy Cell leukemia. - GMI Summary

Pubmed Data : Leuk Lymphoma. 2002 May;43(5):1043-9. PMID: 12148884
Article Published Date : May 01, 2002
Authors : Lennart Hardell, Mikael Eriksson, Marie Nordstrom
Study Type : Human Study
Additional Links
Diseases : Hairy Leukoplakia : CK(10) : AC(2), Lymphoma : CK(209) : AC(69), Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Topic: Prenatal Chemical Exposures

Glyphosate herbicides (Roundup) exhibit pre- and postnatal toxicity in rats. - GMI Summary

Pubmed Data : Arch Toxicol. 2007 Sep;81(9):665-73. Epub 2007 Jul 19. PMID: 17634926
Article Published Date : Sep 01, 2007
Authors : Eliane Dallegrave, Fabiana D Mantese, Rosemari T Oliveira, Anderson J M Andrade, Paulo R Dalsenter, Augusto Langeloh
Study Type : Animal Study
Additional Links
Diseases : Postnatal Care: Breastfeeding : CK(209) : AC(25), Pregnancy: Environmental Exposures : CK(29) : AC(6), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Glyphosate impairs male offspring reproductive development. - GMI Summary

Pubmed Data : Arch Toxicol. 2011 Nov 26. Epub 2011 Nov 26. PMID: 22120950
Article Published Date : Nov 26, 2011
Authors : Marco Aurelio Romano, Renata Marino Romano, Luciana Dalazen Santos, Patricia Wisniewski, Daniele Antonelo Campos, Paula Bargi de Souza, Priscila Viau, Maria Martha Bernardi, Maria Tereza Nunes, Claudio Alvarenga de Oliveira
Study Type : Animal Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52), Male Reproductive Development Abnormalities : CK(2) : AC(1), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)

Maternal exposure to agrochemicals (such as glyphosate) during pregnancy induces a variety of functional abnormalities in the specific activity of the enzymes in the studied organs of the pregnant rats and their fetuses. - GMI Summary

Pubmed Data : Environ Res. 2001 Mar ;85(3):226-31. PMID: 11237511
Article Published Date : Mar 01, 2001
Authors : J Daruich, F Zirulnik, M S Gimenez
Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

The glyphosate herbicide Roundup exhibits teratogenic potential in rats. - GMI Summary

Pubmed Data : Toxicol Lett. 2003 Apr 30;142(1-2):45-52. PMID: 12765238

Article Published Date : Apr 30, 2003

Authors : Eliane Dallegrave, Fabiana DiGiorgio Mantese, Ricardo Soares Coelho, Janaina Drawans Pereira, Paulo Roberto Dalsenter, Augusto Langeloh

Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. - GMI Summary

Pubmed Data : Chem Res Toxicol. 2009 Jan;22(1):97-105. PMID: 19105591

Article Published Date : Jan 01, 2009

Authors : Nora Benachour, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Necrotic : CK(5) : AC(3)

Glyphosate pesticide (Roundup) exposure may adversely alter estrogen-related gene expression. - GMI Summary

Pubmed Data : Hum Exp Toxicol. 2007 Sep;26(9):747-52. PMID: 17984146

Article Published Date : Sep 01, 2007

Authors : R Hokanson, R Fudge, R Chowdhary, D Busbee

Study Type : In Vitro Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Roundup exposure may adversely affect human reproduction and fetal development in case of contamination. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2007 Jul;53(1):126-33. Epub 2007 May 4. PMID: 17486286

Article Published Date : Jul 01, 2007

Authors : N Benachour, H Sipahutar, S Moslemi, C Gasnier, C Travert, G E Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aromatase Disruptor : CK(1) : AC(1), Endocrine Disruptor : CK(478) : AC(81)

Topic: Chemical Exposure

Acute poisoning with glyphosate-containing herbicides is approximately 7.7% from the available studies. - GMI Summary

Pubmed Data : Clin Toxicol (Phila). 2010 Feb;48(2):129-36. PMID: 20136481

Article Published Date : Feb 01, 2010

Authors : Darren M Roberts, Nick A Buckley, Fahim Mohamed, Michael Eddleston, Daniel A Goldstein, Akbar Mehrsheikh, Marian S Bleeke, Andrew H Dawson

Study Type : Human Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116)

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308

Article Published Date : Jan 01, 2011

Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)

Glyphosphate pollution is so omnipresent in the US that the frequency of detection ranged from 60 to 100% in both air and rain. - GMI Summary

Pubmed Data : Environ Toxicol Chem. 2011 Mar;30(3):548-55. Epub 2011 Jan 19. PMID: 21128261

Article Published Date : Mar 01, 2011

Authors : Feng-chih Chang, Matt F Simcik, Paul D Capel

Study Type : Review
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Multiple Myeloma

Multiple myeloma incidence among glyphosate-exposed pesticide applicators in the Agricultural Health Study appears to be higher. - GMI Summary

Pubmed Data : Environ Health Perspect. 2005 Jan ;113(1):49-54. PMID: 15626647

Article Published Date : Jan 01, 2005

Authors : Anneclaire J De Roos, Aaron Blair, Jennifer A Rusiecki, Jane A Hoppin, Megan Svec, Mustafa Dosemeci, Dale P Sandler, Michael C Alavanja

Study Type : Human Study
Additional Links
Diseases : Multiple Myeloma : CK(156) : AC(53)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Rhinitis

Glyphosphate exposure has been linked to rhinitis among pesticide applicators. - GMI Summary

Pubmed Data : J Toxicol Environ Health A. 2010;73(20):1382-93. PMID: 20818537

Article Published Date : Jan 01, 2010

Authors : Rebecca E Slager, Sean L Simpson, Tricia D Levan, Jill A Poole, Dale P Sandler, Jane A Hoppin

Study Type : Human Study
Additional Links
Diseases : Rhinitis : CK(20) : AC(1)

Problem Substances : Pesticides : CK(699) : AC(70), Roundup (herbicide) : CK(365) : AC(116)

Topic: Parkinsonian Disorders

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760

Article Published Date : May 01, 2001

Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite

Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Measles vaccine and glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Arq Neuropsiquiatr. 2003 Jun ;61(2B):381-6. Epub 2003 Jul 28. PMID: 12894271

Article Published Date : Jun 01, 2003

Authors : Maria do Desterro Leiros da Costa, Lílian Regina Gonçalves, Egberto Reis Barbosa, Luiz Alberto Bacheschi

Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Parkinsonian Disorders : CK(15) : AC(4), Vaccine-induced Toxicity : CK(1130) : AC(163)
Anti Therapeutic Actions : Vaccination: Measles : CK(156) : AC(16)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334

Article Published Date : Apr 01, 2012

Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis

Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate induces cell death through apoptotic and autophagic mechanisms, indicating a mechanism behind the association between glyphosate exposure and Parkinsonism. - GMI Summary

Pubmed Data : Neurotoxicol Teratol. 2012 Apr 4. Epub 2012 Apr 4. PMID: 22504123

Article Published Date : Apr 04, 2012

Authors : Ya-Xing Gui, Xiao-Ning Fan, Hong-Mei Wang, Gang Wang, Sheng-di Chen

Study Type : In Vitro Study
Additional Links
Diseases : Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Neurotoxicity

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760
Article Published Date : May 01, 2001
Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite
Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate pesticides leads to neurodegeneration in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotoxicology. 2011 Jun ;32(3):331-41. Epub 2011 Mar 3. PMID: 21376751
Article Published Date : Jun 01, 2011
Authors : Rekek Negga, David A Rudd, Nathan S Davis, Amanda N Justice, Holly E Hatfield, Ana L Valente, Anthony S Fields, Vanessa A Fitsanakis
Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334
Article Published Date : Apr 01, 2012
Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis
Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Endocrine Diseases

The herbicide Roundup may cause disorder in the morphophysiology of the male genital system of animals. - GMI Summary

Pubmed Data : Reprod Toxicol. 2007 Feb;23(2):182-91. Epub 2006 Nov 11. PMID: 17166697
Article Published Date : Feb 01, 2007
Authors : André G Oliveira, Luiz F Telles, Rex A Hess, Germán A B Mahecha, Cleida A Oliveira
Study Type : Animal Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Hormonal Disorders: Children : CK(14) : AC(3)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Roundup exposure may adversely affect human reproduction and fetal development in case of contamination. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2007 Jul;53(1):126-33. Epub 2007 May 4. PMID: 17486286
Article Published Date : Jul 01, 2007
Authors : N Benachour, H Sipahutar, S Moslemi, C Gasnier, C Travert, G E Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aromatase Disruptor : CK(1) : AC(1), Endocrine Disruptor : CK(478) : AC(81)

Topic: Liver Cancer

The environmental metabolite of glyphosate, Aminomethylphosphonic acid, exhibits genotoxicity. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Mar ;72(3):834-7. Epub 2008 Nov 14. PMID: 19013644
Article Published Date : Mar 01, 2009
Authors : F Mañas, L Peralta, J Raviolo, H García Ovando, A Weyers, L Ugnia, M Gonzalez Cid, I Larripa, N Gorla
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Liver Cancer : CK(1641) : AC(266)
Problem Substances : Aminomethylphosphonic acid : CK(12) : AC(5), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Clastogenic : CK(6) : AC(2), Genotoxic : CK(146) : AC(61)

Topic: Chemical Poisoning: Accumulated Environmental Toxins

Glyphosate and Roundup toxicity to aquatic invertebrates have been underestimated and that current European Commission and US EPA toxicity classification of these chemicals need to be revised. - GMI Summary

Pubmed Data : Ecotoxicology. 2012 Dec 6. Epub 2012 Dec 6. PMID: 23224423
Article Published Date : Dec 05, 2012
Authors : Marek Cuhra, Terje Traavik, Thomas Bøhn
Study Type : Animal Study
Additional Links
Diseases : Chemical Poisoning: Accumulated Environmental Toxins : CK(17) : AC(4)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)

Topic: Dopamine Levels: Low

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760

Article Published Date : May 01, 2001

Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite

Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334

Article Published Date : Apr 01, 2012

Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis

Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Infertility: Male

Glyphosate impairs male offspring reproductive development. - GMI Summary

Pubmed Data : Arch Toxicol. 2011 Nov 26. Epub 2011 Nov 26. PMID: 22120950

Article Published Date : Nov 26, 2011

Authors : Marco Aurelio Romano, Renata Marino Romano, Luciana Dalazen Santos, Patricia Wisniewski, Daniele Antonelo Campos, Paula Bargi de Souza, Priscila Viau, Maria Martha Bernardi, Maria Tereza Nunes, Claudio Alvarenga de Oliveira

Study Type : Animal Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52), Male Reproductive Development Abnormalities : CK(2) : AC(1), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)

Pesticide-induced decrease in rat testicular steroidogenesis is differentially prevented by lipoate and tocopherol. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2013 May ;91:129-38. Epub 2013 Mar 7. PMID: 23465731

Article Published Date : Apr 30, 2013

Authors : Mariana Astiz, Graciela E Hurtado de Catalfo, Marcela N García, Susana M Galletti, Ana L Errecalde, María J T de Alaniz, Carlos A Marra

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(384) : AC(82), Vitamin E: alpha tocopherol : CK(1287) : AC(222)
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

Topic: Lipid Peroxidation

Environmentally relevant concentrations of Roundup can pose a health risk for fish populations. - GMI Summary

Pubmed Data : Mutagenesis. 2010 Sep ;25(5):523-30. Epub 2010 Jul 19. PMID: 20643706
Article Published Date : Aug 31, 2010
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Lipid Peroxidation : CK(403) : AC(127)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Glyphosphate exhibits toxicity as very low concentrations. - GMI Summary

Pubmed Data : Ecotoxicology. 2011 Jan;20(1):255-63. Epub 2010 Nov 18. PMID: 21086158
Article Published Date : Jan 01, 2011
Authors : Bibiana Kaiser Dutra, Felipe Amorim Fernandes, Daniela Motta Failace, Guendalina Turcato Oliveira
Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(403) : AC(127), Oxidative Stress : CK(1945) : AC(710)
Additional Keywords : Ecotoxicology: Glyphosate : CK(17) : AC(9)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Oxidant : CK(104) : AC(37)

Topic: Mercury Poisoning

The glyphosate-based formula Roundup sigificantly increases the bioaccumulation of mercury in water fleas. - GMI Summary

Pubmed Data : Environ Pollut. 2005 Nov;138(1):59-68. PMID: 15878796
Article Published Date : Nov 01, 2005
Authors : Martin T K Tsui, Wen-Xiong Wang, L M Chu
Study Type : Animal Study
Additional Links
Diseases : Mercury Poisoning : CK(162) : AC(44)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23)

Topic: Postnatal Care: Breastfeeding

Glyphosate herbicides (Roundup) exhibit pre- and postnatal toxicity in rats. - GMI Summary

Pubmed Data : Arch Toxicol. 2007 Sep;81(9):665-73. Epub 2007 Jul 19. PMID: 17634926

Article Published Date : Sep 01, 2007

Authors : Eliane Dallegrave, Fabiana D Mantese, Rosemari T Oliveira, Anderson J M Andrade, Paulo R Dalsenter, Augusto Langeloh

Study Type : Animal Study
Additional Links
Diseases : Postnatal Care: Breastfeeding : CK(209) : AC(25), Pregnancy: Environmental Exposures : CK(29) : AC(6), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Topic: Pregnancy: Environmental Exposures

Glyphosate herbicides (Roundup) exhibit pre- and postnatal toxicity in rats. - GMI Summary

Pubmed Data : Arch Toxicol. 2007 Sep;81(9):665-73. Epub 2007 Jul 19. PMID: 17634926

Article Published Date : Sep 01, 2007

Authors : Eliane Dallegrave, Fabiana D Mantese, Rosemari T Oliveira, Anderson J M Andrade, Paulo R Dalsenter, Augusto Langeloh

Study Type : Animal Study
Additional Links
Diseases : Postnatal Care: Breastfeeding : CK(209) : AC(25), Pregnancy: Environmental Exposures : CK(29) : AC(6), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Topic: Substantia Nigra: Damage

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760

Article Published Date : May 01, 2001

Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite

Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334

Article Published Date : Apr 01, 2012

Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis

Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)

Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Botulism

Glyphosate suppresses the antagonistic effect of Enterococcus spp. on Clostridium botulinum. - GMI Summary

Pubmed Data : Anaerobe. 2013 Feb 6. Epub 2013 Feb 6. PMID: 23396248
Article Published Date : Feb 05, 2013
Authors : Monika Krüger, Awad Ali Shehata, Wieland Schrödl, Arne Rodloff
Study Type : In Vitro Study, Review
Additional Links
Diseases : Botulism : CK(1) : AC(1), Botulism: Infantile : CK(1) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Immunosuppressive : CK(155) : AC(23)

Topic: Botulism: Infantile

Glyphosate suppresses the antagonistic effect of Enterococcus spp. on Clostridium botulinum. - GMI Summary

Pubmed Data : Anaerobe. 2013 Feb 6. Epub 2013 Feb 6. PMID: 23396248
Article Published Date : Feb 05, 2013
Authors : Monika Krüger, Awad Ali Shehata, Wieland Schrödl, Arne Rodloff
Study Type : In Vitro Study, Review
Additional Links
Diseases : Botulism : CK(1) : AC(1), Botulism: Infantile : CK(1) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Immunosuppressive : CK(155) : AC(23)

Topic: Chemically-Induced Liver Damage

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308
Article Published Date : Jan 01, 2011
Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)

Glyphosphate has liver damaging properties, - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2010;5:29. Epub 2010 Oct 27. PMID: 20979644

Article Published Date : Jan 01, 2010

Authors : Céline Gasnier, Nora Benachour, Emilie Clair, Carine Travert, Frédéric Langlois, Claire Laurant, Cécile Decroix-Laporte, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80)

Topic: Meningitis: Aseptic

Glyphosphate poisoning resulting in aseptic meningitis has been reported. - GMI Summary

Pubmed Data : Clin Toxicol (Phila). 2011 Feb;49(2):118-20. PMID: 21370950

Article Published Date : Feb 01, 2011

Authors : Chie Sato, Yoshito Kamijo, Kuniko Yoshimura, Toshimitsu Ide

Study Type : Human: Case Report
Additional Links
Diseases : Meningitis: Aseptic : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Neurodegenerative Diseases

Glyphosate pesticides leads to neurodegeneration in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotoxicology. 2011 Jun ;32(3):331-41. Epub 2011 Mar 3. PMID: 21376751

Article Published Date : Jun 01, 2011

Authors : Rekek Negga, David A Rudd, Nathan S Davis, Amanda N Justice, Holly E Hatfield, Ana L Valente, Anthony S Fields, Vanessa A Fitsanakis

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334

Article Published Date : Apr 01, 2012

Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis

Study Type : In Vitro Study
Additional Links

Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Oxidative Stress

Fish exposed to a glyphosate-based herbicide undergo DNA damage. - GMI Summary

Pubmed Data : Mutat Res. 2012 Mar 18 ;743(1-2):1-9. Epub 2012 Jan 14. PMID: 22266476
Article Published Date : Mar 17, 2012
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Oxidative Stress : CK(1945) : AC(710)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Glyphosphate exhibits toxicity as very low concentrations. - GMI Summary

Pubmed Data : Ecotoxicology. 2011 Jan;20(1):255-63. Epub 2010 Nov 18. PMID: 21086158
Article Published Date : Jan 01, 2011
Authors : Bibiana Kaiser Dutra, Felipe Amorim Fernandes, Daniela Motta Failace, Guendalina Turcato Oliveira
Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(403) : AC(127), Oxidative Stress : CK(1945) : AC(710)
Additional Keywords : Ecotoxicology: Glyphosate : CK(17) : AC(9)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Oxidant : CK(104) : AC(37)

Topic: Parkinson Disease

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334
Article Published Date : Apr 01, 2012
Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne

Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis

Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate induces cell death through apoptotic and autophagic mechanisms, indicating a mechanism behind the association between glyphosate exposure and Parkinsonism. - GMI Summary

Pubmed Data : Neurotoxicol Teratol. 2012 Apr 4. Epub 2012 Apr 4. PMID: 22504123

Article Published Date : Apr 04, 2012

Authors : Ya-Xing Gui, Xiao-Ning Fan, Hong-Mei Wang, Gang Wang, Sheng-di Chen

Study Type : In Vitro Study
Additional Links
Diseases : Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Parkinsonism

Parkinsonism after chronic occupational exposure to glyphosate has been reported. - GMI Summary

Pubmed Data : Parkinsonism Relat Disord. 2011 Jul;17(6):486-7. Epub 2011 Mar 2. PMID: 21367645

Article Published Date : Jul 01, 2011

Authors : Gang Wang, Xiao-Ning Fan, Yu-Yan Tan, Qi Cheng, Sheng-Di Chen

Study Type : Human: Case Report
Additional Links
Diseases : Parkinsonism : CK(12) : AC(8)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Vaccine-induced Toxicity

Measles vaccine and glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Arq Neuropsiquiatr. 2003 Jun ;61(2B):381-6. Epub 2003 Jul 28. PMID: 12894271

Article Published Date : Jun 01, 2003

Authors : Maria do Desterro Leiros da Costa, Lílian Regina Gonçalves, Egberto Reis Barbosa, Luiz Alberto Bacheschi

Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Parkinsonian Disorders : CK(15) : AC(4), Vaccine-induced Toxicity : CK(1130) : AC(163)
Anti Therapeutic Actions : Vaccination: Measles : CK(156) : AC(16)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Breast Cancer

Glyphosate induces human breast cancer cells growth via estrogen receptors. - GMI Summary

Pubmed Data : Food Chem Toxicol. 2013 Jun 8. Epub 2013 Jun 8. PMID: 23756170

Article Published Date : Jun 07, 2013

Authors : Siriporn Thongprakaisang, Apinya Thiantanawat, Nuchanart Rangkadilok, Tawit Suriyo, Jutamaad Satayavivad

Study Type : In Vitro Study
Additional Links
Diseases : Breast Cancer : CK(2361) : AC(621), Breast Cancer: Chemically-Induced : CK(5) : AC(3), Breast Cancer: estrogen receptor alpha-positive : CK(3) : AC(2)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Carcinogenic : CK(912) : AC(117), Estrogenic : CK(59) : AC(12)

Topic: Breast Cancer: Chemically-Induced

Glyphosate induces human breast cancer cells growth via estrogen receptors. - GMI Summary

Pubmed Data : Food Chem Toxicol. 2013 Jun 8. Epub 2013 Jun 8. PMID: 23756170

Article Published Date : Jun 07, 2013

Authors : Siriporn Thongprakaisang, Apinya Thiantanawat, Nuchanart Rangkadilok, Tawit Suriyo, Jutamaad Satayavivad

Study Type : In Vitro Study
Additional Links
Diseases : Breast Cancer : CK(2361) : AC(621), Breast Cancer: Chemically-Induced : CK(5) : AC(3), Breast Cancer: estrogen receptor alpha-positive : CK(3) : AC(2)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Carcinogenic : CK(912) : AC(117), Estrogenic : CK(59) : AC(12)

Topic: Breast Cancer: estrogen receptor alpha-positive

Glyphosate induces human breast cancer cells growth via estrogen receptors. - GMI Summary

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Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Carcinogenic : CK(912) : AC(117), Estrogenic : CK(59) : AC(12)

Topic: Cancers: All

Roundup herbicide is more toxic than its constituent parts and is genotoxic in concentrations that concentrations that correspond to a 450-fold dilution of spraying used in agriculture. - GMI Summary

Pubmed Data : Arch Toxicol. 2012 Feb 14. Epub 2012 Feb 14. PMID: 22331240

Article Published Date : Feb 14, 2012

Authors : Verena J Koller, Maria Fürhacker, Armen Nersesyan, Miroslav Mišík, Maria Eisenbauer, Siegfried Knasmueller

Study Type : In Vitro Study
Additional Links
Diseases : Cancers: All : CK(9062) : AC(2869), DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Topic: Male Reproductive Development Abnormalities

Glyphosate impairs male offspring reproductive development. - GMI Summary

Pubmed Data : Arch Toxicol. 2011 Nov 26. Epub 2011 Nov 26. PMID: 22120950

Article Published Date : Nov 26, 2011

Authors : Marco Aurelio Romano, Renata Marino Romano, Luciana Dalazen Santos, Patricia Wisniewski, Daniele Antonelo Campos, Paula Bargi de Souza, Priscila Viau, Maria Martha Bernardi, Maria Tereza Nunes, Claudio Alvarenga de Oliveira

Study Type : Animal Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52), Male Reproductive Development Abnormalities : CK(2) : AC(1), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Skin Cancer

Glyphosphate has a tumor-promoting effect in mouse skin. - GMI Summary

Pubmed Data : J Proteomics. 2010 Mar 10;73(5):951-64. Epub 2010 Jan 4. PMID: 20045496

Article Published Date : Mar 10, 2010

Authors : Jasmine George, Sahdeo Prasad, Zafar Mahmood, Yogeshwer Shukla

Study Type : In Vitro Study
Additional Links
Diseases : Skin Cancer : CK(417) : AC(171)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Topic: Dysbiosis

Glyphosate exposure likely disrupts the balance of friendly and pathogenic bacteria in our guts. - GMI Summary

Pubmed Data : Curr Microbiol. 2012 Dec 9. Epub 2012 Dec 9. PMID: 23224412

Article Published Date : Dec 08, 2012

Authors : Awad A Shehata, Wieland Schrödl, Alaa A Aldin, Hafez M Hafez, Monika Krüger

Study Type : Bacterial
Additional Links
Diseases : Dysbiosis : CK(123) : AC(30)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Kidney Damage

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308

Article Published Date : Jan 01, 2011

Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)

Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)

Topic: Liver Damage

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308

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Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)

Topic: Lymphatic Cancer

Glyphosate has been linked to lymphatic cancer. - GMI Summary

Pubmed Data : Med Pr. 2003 ;54(6):579-83. PMID: 15055003

Article Published Date : Jan 01, 2003

Authors : Danuta Pieniazek, Bozena Bukowska, Wirgiliusz Duda

Study Type : Review
Additional Links
Diseases : Lymphatic Cancer : CK(213) : AC(69)
Problem Substances : Glyphosate : CK(365) : AC(116)

Topic: Uranium Poisoning

Glyphosphate increases the bioaccumulation of depleted uranium in plants 17 fold. - GMI Summary

Pubmed Data : Int J Phytoremediation. 2010 Aug;12(6):550-61. PMID: 21166280

Article Published Date : Aug 01, 2010

Authors : Elena Sevostianova, William C Lindemann, April L Ulery, Marta D Remmenga

Study Type : In Vitro Study
Additional Links
Diseases : Uranium Poisoning : CK(28) : AC(19)
Additional Keywords : Problem Substance Synergy : CK(5) : AC(3)
Problem Substances : Glyphosate : CK(365) : AC(116), Uranium : CK(46) : AC(21)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23)

Category: Adverse Pharmacological Actions

Topic: Genotoxic

There is evidence that there is a genotoxic risk potential associated with exposure to glyphosate in areas where the herbicide is applied. - GMI Summary

Pubmed Data : J Toxicol Environ Health A. 2009;72(15-16):986-97. PMID: 19672767

Article Published Date : Jan 01, 2009

Authors : C Bolognesi, G Carrasquilla, S Volpi, K R Solomon, E J P Marshall
Study Type : Human Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Cytogenetic damage and induction of pro-oxidant state has been observed in human lymphocytes exposed in vitro to glyphosate. - GMI Summary

Pubmed Data : Environ Mol Mutagen. 1998 ;32(1):39-46. PMID: 9707097
Article Published Date : Jan 01, 1998
Authors : M B Lioi, M R Scarfi, A Santoro, R Barbieri, O Zeni, F Salvemini, D Di Berardino, M V Ursini
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

The environmental metabolite of glyphosate, Aminomethylphosphonic acid, exhibits genotoxicity. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Mar ;72(3):834-7. Epub 2008 Nov 14. PMID: 19013644
Article Published Date : Mar 01, 2009
Authors : F Mañas, L Peralta, J Raviolo, H García Ovando, A Weyers, L Ugnia, M Gonzalez Cid, I Larripa, N Gorla
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Liver Cancer : CK(1641) : AC(266)
Problem Substances : Aminomethylphosphonic acid : CK(12) : AC(5), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Clastogenic : CK(6) : AC(2), Genotoxic : CK(146) : AC(61)

Both the general health condition and reproductive success of J. multidenatata (fish) could be seriously affected by Roundup. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2012 Jan ;62(1):107-17. Epub 2011 Jun 4. PMID: 21643816
Article Published Date : Dec 31, 2011
Authors : Andrea Cecilia Hued, Sabrina Oberhofer, María de losÁngeles Bistoni
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Commercial glyphosate herbicides exhibit genotoxicity in fish. - GMI Summary

Pubmed Data : Mutagenesis. 2007 Jul;22(4):263-8. Epub 2007 Apr 10. PMID: 17426049
Article Published Date : Jul 01, 2007
Authors : Tolga Cavaş, Serpil Könen
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Components of the original formulation of Roundup exhibit significant toxicity in five North American anurans (frogs; keystone species). - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2012 Apr ;78:128-33. Epub 2011 Dec 3. PMID: 22137360
Article Published Date : Mar 31, 2012

Authors : Lindsay J Moore, Latice Fuentes, John H Rodgers, William W Bowerman, Greg K Yarrow, Wayne Y Chao, William C Bridges
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Environmentally relevant concentrations of Roundup can pose a health risk for fish populations. - GMI Summary

Pubmed Data : Mutagenesis. 2010 Sep ;25(5):523-30. Epub 2010 Jul 19. PMID: 20643706
Article Published Date : Aug 31, 2010
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Lipid Peroxidation : CK(403) : AC(127)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Fish exposed to a glyphosate-based herbicide undergo DNA damage. - GMI Summary

Pubmed Data : Mutat Res. 2012 Mar 18 ;743(1-2):1-9. Epub 2012 Jan 14. PMID: 22266476
Article Published Date : Mar 17, 2012
Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Oxidative Stress : CK(1945) : AC(710)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Genotoxic effects of the herbicide Roundup(®) have been observed in the fish species Corydoras paleatus after short-term, environmentally low concentration exposure. - GMI Summary

Pubmed Data : Environ Monit Assess. 2012 Jul 22. Epub 2012 Jul 22. PMID: 22821326
Article Published Date : Jul 21, 2012
Authors : Nédia de Castilhos Ghisi, Marta Margarete Cestari
Study Type : Animal Study, Environmental
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Roundup is able to induce a dose-dependent formation of DNA adducts in the kidneys and liver of mice. - GMI Summary

Pubmed Data : Environ Mol Mutagen. 1998 ;31(1):55-9. PMID: 9464316
Article Published Date : Jan 01, 1998
Authors : M Peluso, A Munnia, C Bolognesi, S Parodi
Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Roundup(®) formulation exhibits genotoxicity in blood cells of fish (Anguilla anguilla). - GMI Summary

Pubmed Data : Ecotoxicology. 2012 Jul ;21(5):1381-90. Epub 2012 Apr 8. PMID: 22526921
Article Published Date : Jun 30, 2012
Authors : S Guilherme, M A Santos, C Barroso, I Gaivão, M Pacheco
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Glyphosate has genotoxic properties. - GMI Summary

Pubmed Data : Int J Hyg Environ Health. 2006 Jan ;209(1):15-20. Epub 2005 Aug 29. PMID: 16373198
Article Published Date : Jan 01, 2006
Authors : Katarína Siviková, Ján Dianovskỳ
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Glyphosate pesticide (Roundup) exposure may adversely alter estrogen-related gene expression. - GMI Summary

Pubmed Data : Hum Exp Toxicol. 2007 Sep;26(9):747-52. PMID: 17984146
Article Published Date : Sep 01, 2007
Authors : R Hokanson, R Fudge, R Chowdhary, D Busbee
Study Type : In Vitro Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Glyphosate-based pesticides adversely affect cell cycle regulation at concentrations 500 to 4000 times lower than used in agriculatural applications. - GMI Summary

Pubmed Data : Biol Cell. 2004 Apr ;96(3):245-9. PMID: 15182708
Article Published Date : Apr 01, 2004
Authors : Julie Marc, Odile Mulner-Lorillon, Robert Bellé
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35), Genotoxic : CK(146) : AC(61)

Glyphosphate exhibits genotoxicity in human cells. - GMI Summary

Pubmed Data : Biomedica. 2005 Sep;25(3):335-45. PMID: 16276681
Article Published Date : Sep 01, 2005
Authors : Claudia Milena Monroy, Andrea Carolina Cortés, Diana Mercedes Sicard, Helena Groot de Restrepo
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Roundup herbicide is more toxic than its constituent parts and is genotoxic in

concentrations that concentrations that correspond to a 450-fold dilution of spraying used in agriculture. - GMI Summary

Pubmed Data : Arch Toxicol. 2012 Feb 14. Epub 2012 Feb 14. PMID: 22331240

Article Published Date : Feb 14, 2012

Authors : Verena J Koller, Maria Fürhacker, Armen Nersesyan, Miroslav Mišík, Maria Eisenbauer, Siegfried Knasmueller

Study Type : In Vitro Study
Additional Links
Diseases : Cancers: All : CK(9062) : AC(2869), DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Genotoxic : CK(146) : AC(61)

Topic: Endocrine Disruptor

Prepubertal exposure to commercial formulation of the herbicide glyphosate alters testosterone levels and testicular morphology. - GMI Summary

Pubmed Data : Arch Toxicol. 2010 Apr;84(4):309-17. Epub 2009 Dec 12. PMID: 20012598

Article Published Date : Apr 01, 2010

Authors : R M Romano, M A Romano, M M Bernardi, P V Furtado, C A Oliveira

Study Type : Human Study
Additional Links
Diseases : Hormonal Disorders: Children : CK(14) : AC(3), Pesticide Toxicity : CK(147) : AC(45), Testosterone: Too Low : CK(369) : AC(70)
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Both the general health condition and reproductive success of J. multidenatata (fish) could be seriously affected by Roundup. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2012 Jan ;62(1):107-17. Epub 2011 Jun 4. PMID: 21643816

Article Published Date : Dec 31, 2011

Authors : Andrea Cecilia Hued, Sabrina Oberhofer, María de losÁngeles Bistoni

Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Endocrine and toxic effects of Roundup, not just glyphosate, can be observed in mammals, and Roundup adjuvants enhance glyphosate bioavailability and/or bioaccumulation. - GMI Summary

Pubmed Data : Environ Health Perspect. 2005 Jun;113(6):716-20. PMID: 15929894

Article Published Date : Jun 01, 2005

Authors : Sophie Richard, Safa Moslemi, Herbert Sipahutar, Nora Benachour, Gilles-Eric Seralini

Study Type : Animal Study
Additional Links
Additional Keywords : Drug-Plant-Vitamin Synergies : CK(1011) : AC(268)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23), Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81)

Glyphosate herbicides (Roundup) exhibit pre- and postnatal toxicity in rats. - GMI Summary

Pubmed Data : Arch Toxicol. 2007 Sep;81(9):665-73. Epub 2007 Jul 19. PMID: 17634926

Article Published Date : Sep 01, 2007

Authors : Eliane Dallegrave, Fabiana D Mantese, Rosemari T Oliveira, Anderson J M Andrade, Paulo R Dalsenter, Augusto Langeloh

Study Type : Animal Study
Additional Links
Diseases : Postnatal Care: Breastfeeding : CK(209) : AC(25), Pregnancy: Environmental Exposures : CK(29) : AC(6), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Maternal exposure to agrochemicals (such as glyphosate) during pregnancy induces a variety of functional abnormalities in the specific activity of the enzymes in the studied organs of the pregnant rats and their fetuses. - GMI Summary

Pubmed Data : Environ Res. 2001 Mar ;85(3):226-31. PMID: 11237511

Article Published Date : Mar 01, 2001

Authors : J Daruich, F Zirulnik, M S Gimenez

Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

The glyphosate herbicide Roundup exhibits teratogenic potential in rats. - GMI Summary

Pubmed Data : Toxicol Lett. 2003 Apr 30;142(1-2):45-52. PMID: 12765238

Article Published Date : Apr 30, 2003

Authors : Eliane Dallegrave, Fabiana DiGiorgio Mantese, Ricardo Soares Coelho, Janaina Drawans Pereira, Paulo Roberto Dalsenter, Augusto Langeloh

Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

The herbicide Roundup may cause disorder in the morphophysiology of the male genital system of animals. - GMI Summary

Pubmed Data : Reprod Toxicol. 2007 Feb;23(2):182-91. Epub 2006 Nov 11. PMID: 17166697

Article Published Date : Feb 01, 2007

Authors : André G Oliveira, Luiz F Telles, Rex A Hess, Germán A B Mahecha, Cleida A Oliveira

Study Type : Animal Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Hormonal Disorders: Children : CK(14) : AC(3)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81)

Glyphosate pesticide (Roundup) exposure may adversely alter estrogen-related gene expression. - GMI Summary

Pubmed Data : Hum Exp Toxicol. 2007 Sep;26(9):747-52. PMID: 17984146

Article Published Date : Sep 01, 2007

Authors : R Hokanson, R Fudge, R Chowdhary, D Busbee

Study Type : In Vitro Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)

Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines at exceedingly small concentrations (.5 ppm to 10 ppm). - GMI Summary

Pubmed Data : Toxicology. 2009 Aug 21;262(3):184-91. Epub 2009 Jun 17. PMID: 19539684
Article Published Date : Aug 21, 2009
Authors : Céline Gasnier, Coralie Dumont, Nora Benachour, Emilie Clair, Marie-Christine Chagnon, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Additional Keywords : Estrogen Receptor Beta : CK(24) : AC(11)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81), Mutagenic : CK(22) : AC(11)

Roundup exposure may adversely affect human reproduction and fetal development in case of contamination. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2007 Jul;53(1):126-33. Epub 2007 May 4. PMID: 17486286
Article Published Date : Jul 01, 2007
Authors : N Benachour, H Sipahutar, S Moslemi, C Gasnier, C Travert, G E Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aromatase Disruptor : CK(1) : AC(1), Endocrine Disruptor : CK(478) : AC(81)

Topic: Carcinogen

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma and Hairy Cell leukemia. - GMI Summary

Pubmed Data : Leuk Lymphoma. 2002 May;43(5):1043-9. PMID: 12148884
Article Published Date : May 01, 2002
Authors : Lennart Hardell, Mikael Eriksson, Marie Nordstrom
Study Type : Human Study
Additional Links
Diseases : Hairy Leukoplakia : CK(10) : AC(2), Lymphoma : CK(209) : AC(69), Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Glyphosate pesticide (Roundup) exposure is a risk factor for non-Hodgkin lymphoma. - GMI Summary

Pubmed Data : Int J Cancer. 2008 Oct 1;123(7):1657-63. PMID: 18623080
Article Published Date : Oct 01, 2008
Authors : Mikael Eriksson, Lennart Hardell, Michael Carlberg, Måns Akerman
Study Type : Human Study
Additional Links
Diseases : Lymphoma: Non-Hodgkin : CK(256) : AC(67)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Glyphosphate has a tumor-promoting effect in mouse skin. - GMI Summary

Pubmed Data : J Proteomics. 2010 Mar 10;73(5):951-64. Epub 2010 Jan 4. PMID: 20045496
Article Published Date : Mar 10, 2010
Authors : Jasmine George, Sahdeo Prasad, Zafar Mahmood, Yogeshwer Shukla
Study Type : In Vitro Study
Additional Links
Diseases : Skin Cancer : CK(417) : AC(171)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Carcinogen : CK(59) : AC(11)

Topic: Cytotoxic

Glyphosate adjuvants are not inactive, and exert cytotoxic effects at concentrations as low as 1 ppm. - GMI Summary

Pubmed Data : Toxicology. 2012 Sep 21. Epub 2012 Sep 21. PMID: 23000283
Article Published Date : Sep 20, 2012
Authors : R Mesnage, B Bernay, G-E Séralini
Study Type : Human In Vitro
Additional Links
Problem Substances : Ethoxylated adjuvants : CK(5) : AC(1), Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35)

Endocrine and toxic effects of Roundup, not just glyphosate, can be observed in mammals, and Roundup adjuvants enhance glyphosate bioavailability and/or bioaccumulation. - GMI Summary

Pubmed Data : Environ Health Perspect. 2005 Jun;113(6):716-20. PMID: 15929894
Article Published Date : Jun 01, 2005
Authors : Sophie Richard, Safa Moslemi, Herbert Sipahutar, Nora Benachour, Gilles-Eric Seralini
Study Type : Animal Study
Additional Links
Additional Keywords : Drug-Plant-Vitamin Synergies : CK(1011) : AC(268)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23), Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81)

Study: Oral and intracheal toxicities of Roundup and its components. - GMI Summary

Pubmed Data : Vet Hum Toxicol. 1997 Jun;39(3):147-51. PMID: 9167243
Article Published Date : Jun 01, 1997
Authors : A Adam, A Marzuki, H Abdul Rahman, M Abdul Aziz
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35)

"Formulated glyphosate activates the DNA-response checkpoint of the cell cycle leading to the prevention of G2/M transition." - GMI Summary

Pubmed Data : Toxicol Sci. 2004 Dec ;82(2):436-42. Epub 2004 Sep 16. PMID: 15375296
Article Published Date : Dec 01, 2004
Authors : Julie Marc, Robert Bellé, Julia Morales, Patrick Cormier, Odile Mulner-Lorillon
Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35)

A commercial formulation of glyphosate inhibits proliferation and differentiation to adipocytes and induces programmed cell death in 3T3-L1 fibroblasts. - GMI Summary

Pubmed Data : Toxicol In Vitro. 2012 Apr 21. Epub 2012 Apr 21. PMID: 22546541

Article Published Date : Apr 21, 2012

Authors : Claudia N Martini, Matías Gabrielli, María Del C Vila

Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Cytotoxic : CK(73) : AC(35)

A glyphosate-based pesticide impinges on transcription. - GMI Summary

Pubmed Data : Toxicol Appl Pharmacol. 2005 Feb 15 ;203(1):1-8. PMID: 15694458

Article Published Date : Feb 15, 2005

Authors : Julie Marc, Magali Le Breton, Patrick Cormier, Julia Morales, Robert Bellé, Odile Mulner-Lorillon

Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35)

Glyphosate pesticides are cytotoxic to human peripheral blood mononuclear cells. - GMI Summary

Pubmed Data : Biomedica. 2007 Dec;27(4):594-604. PMID: 18320126

Article Published Date : Dec 01, 2007

Authors : Adriano Martínez, Ismael Reyes, Niradiz Reyes

Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35)

Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines at exceedingly small concentrations (.5 ppm to 10 ppm). - GMI Summary

Pubmed Data : Toxicology. 2009 Aug 21;262(3):184-91. Epub 2009 Jun 17. PMID: 19539684

Article Published Date : Aug 21, 2009

Authors : Céline Gasnier, Coralie Dumont, Nora Benachour, Emilie Clair, Marie-Christine Chagnon, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Additional Keywords : Estrogen Receptor Beta : CK(24) : AC(11)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81), Mutagenic : CK(22) : AC(11)

Glyphosate-based pesticides adversely affect cell cycle regulation at concentrations 500 to 4000 times lower than used in agriculatural applications. - GMI Summary

Pubmed Data : Biol Cell. 2004 Apr ;96(3):245-9. PMID: 15182708

Article Published Date : Apr 01, 2004

Authors : Julie Marc, Odile Mulner-Lorillon, Robert Bellé

Study Type : In Vitro Study
Additional Links

Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35), Genotoxic : CK(146) : AC(61)

Roundup affects cell cycle regulation by delaying activation of the CDK1/cyclin B complex, by synergic effect of glyphosate and formulation products. - GMI Summary

Pubmed Data : Chem Res Toxicol. 2002 Mar ;15(3):326-31. PMID: 11896679
Article Published Date : Mar 01, 2002
Authors : Julie Marc, Odile Mulner-Lorillon, Sandrine Boulben, Dorothée Hureau, Gaël Durand, Robert Bellé
Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35)

Topic: Neurotoxic

Acute glyphosate-surfactant poisoning with neurological sequels and fatal outcome - GMI Summary

Pubmed Data : Vojnosanit Pregl. 2009 Sep ;66(9):758-62. PMID: 19877558
Article Published Date : Sep 01, 2009
Authors : Olivera Potrebić, Jasmina Jović-Stosić, Slavica Vucinić, Jelena Tadić, Misel Radulac
Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Mov Disord. 2001 May ;16(3):565-8. PMID: 11391760
Article Published Date : May 01, 2001
Authors : E R Barbosa, M D Leiros da Costa, L A Bacheschi, M Scaff, C C Leite
Study Type : Human: Case Report
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurotoxicity : CK(37) : AC(15), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosphate poisoning resulting in aseptic meningitis has been reported. - GMI Summary

Pubmed Data : Clin Toxicol (Phila). 2011 Feb;49(2):118-20. PMID: 21370950
Article Published Date : Feb 01, 2011
Authors : Chie Sato, Yoshito Kamijo, Kuniko Yoshimura, Toshimitsu Ide
Study Type : Human: Case Report
Additional Links
Diseases : Meningitis: Aseptic : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Measles vaccine and glyphosate-induced parkinsonism has been reported. - GMI Summary

Pubmed Data : Arq Neuropsiquiatr. 2003 Jun ;61(2B):381-6. Epub 2003 Jul 28. PMID: 12894271

Article Published Date : Jun 01, 2003

Authors : Maria do Desterro Leiros da Costa, Lílian Regina Gonçalves, Egberto Reis Barbosa, Luiz Alberto Bacheschi

Study Type : Human: Case Report
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Parkinsonian Disorders : CK(15) : AC(4), Vaccine-induced Toxicity : CK(1130) : AC(163)
Anti Therapeutic Actions : Vaccination: Measles : CK(156) : AC(16)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Parkinsonism after chronic occupational exposure to glyphosate has been reported. - GMI Summary

Pubmed Data : Parkinsonism Relat Disord. 2011 Jul;17(6):486-7. Epub 2011 Mar 2. PMID: 21367645

Article Published Date : Jul 01, 2011

Authors : Gang Wang, Xiao-Ning Fan, Yu-Yan Tan, Qi Cheng, Sheng-Di Chen

Study Type : Human: Case Report
Additional Links
Diseases : Parkinsonism : CK(12) : AC(8)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate exposure of the fish (Cnesterodon decemmaculatus) to environmentally relevant concentrations of glyphosate may cause neurotoxicity. - GMI Summary

Pubmed Data : Bull Environ Contam Toxicol. 2012 Jan ;88(1):6-9. PMID: 22002176

Article Published Date : Dec 31, 2011

Authors : Renata J Menéndez-Helman, Gisele V Ferreyroa, Maria dos Santos Afonso, Alfredo Salibián

Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(2) : AC(1), Aquacidal : CK(2) : AC(1), Neurotoxic : CK(1076) : AC(179)

Glyphosate pesticides leads to neurodegeneration in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotoxicology. 2011 Jun ;32(3):331-41. Epub 2011 Mar 3. PMID: 21376751

Article Published Date : Jun 01, 2011

Authors : Rekek Negga, David A Rudd, Nathan S Davis, Amanda N Justice, Holly E Hatfield, Ana L Valente, Anthony S Fields, Vanessa A Fitsanakis

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Roundup causes oxidative stress in liver and inhibits acetylcholinesterase in muscle and brain of a neotropical fish. - GMI Summary

Pubmed Data : Chemosphere. 2010 Jan;78(3):294-9. Epub 2009 Nov 11. PMID: 19910015

Article Published Date : Jan 01, 2010

Authors : Kathya A Modesto, Cláudia B R Martinez

Study Type : Animal Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Exposure to glyphosate- and/or Mn/Zn-ethylene-bis-dithiocarbamate-containing pesticides leads to degeneration ofγ-aminobutyric acid and dopamine neurons in Caenorhabditis elegans. - GMI Summary

Pubmed Data : Neurotox Res. 2012 Apr ;21(3):281-90. Epub 2011 Sep 16. PMID: 21922334
Article Published Date : Apr 01, 2012
Authors : Rekek Negga, J Andrew Stuart, Morgan L Machen, Joel Salva, Amanda J Lizek, S Jayne Richardson, Amanda S Osborne, Oriol Mirallas, Kenneth A McVey, Vanessa A Fitsanakis
Study Type : In Vitro Study
Additional Links
Diseases : Dopamine Levels: Low : CK(4) : AC(1), Glyphosate Toxicity : CK(22) : AC(12), Neurodegenerative Diseases : CK(1743) : AC(420), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4), Substantia Nigra: Damage : CK(3) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Glyphosate induces cell death through apoptotic and autophagic mechanisms, indicating a mechanism behind the association between glyphosate exposure and Parkinsonism. - GMI Summary

Pubmed Data : Neurotoxicol Teratol. 2012 Apr 4. Epub 2012 Apr 4. PMID: 22504123
Article Published Date : Apr 04, 2012
Authors : Ya-Xing Gui, Xiao-Ning Fan, Hong-Mei Wang, Gang Wang, Sheng-di Chen
Study Type : In Vitro Study
Additional Links
Diseases : Parkinson Disease : CK(543) : AC(79), Parkinsonian Disorders : CK(15) : AC(4)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Neurotoxic : CK(1076) : AC(179)

Topic: Aquacidal

Both the general health condition and reproductive success of J. multidenatata (fish) could be seriously affected by Roundup. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2012 Jan ;62(1):107-17. Epub 2011 Jun 4. PMID: 21643816
Article Published Date : Dec 31, 2011
Authors : Andrea Cecilia Hued, Sabrina Oberhofer, María de losÁngeles Bistoni
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Endocrine Disruptor : CK(478) : AC(81), Genotoxic : CK(146) : AC(61)

Components of the original formulation of Roundup exhibit significant toxicity in five North American anurans (frogs; keystone species). - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2012 Apr ;78:128-33. Epub 2011 Dec 3. PMID: 22137360

Article Published Date : Mar 31, 2012

Authors : Lindsay J Moore, Latice Fuentes, John H Rodgers, William W Bowerman, Greg K Yarrow, Wayne Y Chao, William C Bridges

Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Environmentally relevant concentrations of Roundup can pose a health risk for fish populations. - GMI Summary

Pubmed Data : Mutagenesis. 2010 Sep ;25(5):523-30. Epub 2010 Jul 19. PMID: 20643706

Article Published Date : Aug 31, 2010

Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Lipid Peroxidation : CK(403) : AC(127)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Fish exposed to a glyphosate-based herbicide undergo DNA damage. - GMI Summary

Pubmed Data : Mutat Res. 2012 Mar 18 ;743(1-2):1-9. Epub 2012 Jan 14. PMID: 22266476

Article Published Date : Mar 17, 2012

Authors : S Guilherme, I Gaivão, M A Santos, M Pacheco

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Oxidative Stress : CK(1945) : AC(710)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Genotoxic effects of the herbicide Roundup(®) have been observed in the fish species Corydoras paleatus after short-term, environmentally low concentration exposure. - GMI Summary

Pubmed Data : Environ Monit Assess. 2012 Jul 22. Epub 2012 Jul 22. PMID: 22821326

Article Published Date : Jul 21, 2012

Authors : Nédia de Castilhos Ghisi, Marta Margarete Cestari

Study Type : Animal Study, Environmental
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Glyphosate exposure of the fish (Cnesterodon decemmaculatus) to environmentally relevant concentrations of glyphosate may cause neurotoxicity. - GMI Summary

Pubmed Data : Bull Environ Contam Toxicol. 2012 Jan ;88(1):6-9. PMID: 22002176

Article Published Date : Dec 31, 2011

Authors : Renata J Menéndez-Helman, Gisele V Ferreyroa, Maria dos Santos Afonso, Alfredo Salibián

Study Type : Animal Study

Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(2) : AC(1), Aquacidal : CK(2) : AC(1), Neurotoxic : CK(1076) : AC(179)

Roundup causes oxidative stress in liver and inhibits acetylcholinesterase in muscle and brain of a neotropical fish. - GMI Summary

Pubmed Data : Chemosphere. 2010 Jan;78(3):294-9. Epub 2009 Nov 11. PMID: 19910015
Article Published Date : Jan 01, 2010
Authors : Kathya A Modesto, Cláudia B R Martinez
Study Type : Animal Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Roundup(®) formulation exhibits genotoxicity in blood cells of fish (Anguilla anguilla). - GMI Summary

Pubmed Data : Ecotoxicology. 2012 Jul ;21(5):1381-90. Epub 2012 Apr 8. PMID: 22526921
Article Published Date : Jun 30, 2012
Authors : S Guilherme, M A Santos, C Barroso, I Gaivão, M Pacheco
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Genotoxic : CK(146) : AC(61)

Topic: Biocide

Acute exposure of a glyphosate-based herbicide results in severe damage to the liver of fish. - GMI Summary

Pubmed Data : Environ Toxicol Pharmacol. 2012 May 31 ;34(2):388-396. Epub 2012 May 31. PMID: 22743578
Article Published Date : May 30, 2012
Authors : Natália S Shiogiri, Marcelo G Paulino, Silvia P Carraschi, Flávia G Baraldi, Claudinei da Cruz, Marisa Narciso Fernandes
Study Type : Environmental
Additional Links
Problem Substances : Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Biocide : CK(7) : AC(3), Hepatotoxic : CK(283) : AC(80)

Glyphosate and especially Roundup Ultra bioaccumulates and causes oxidative stress in freshwater worms. - GMI Summary

Pubmed Data : Environ Pollut. 2009 Jan;157(1):57-63. Epub 2008 Sep 14. PMID: 18790555
Article Published Date : Jan 01, 2009
Authors : Valeska Contardo-Jara, Eva Klingelmann, Claudia Wiegand
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Biocide : CK(7) : AC(3)

Herbicide formulation with glyphosate adversely affects growth, acetylcholinesterase activity, and metabolic and hematological parameters in fish. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2010 Apr;58(3):740-5. Epub 2010 Jan 30. PMID: 20112104

Article Published Date : Apr 01, 2010

Authors : Joseânia Salbego, Alexandra Pretto, Carolina Rosa Gioda, Charlene Cavalheiro de Menezes, Rafael Lazzari, João Radünz Neto, Bernardo Baldisserotto, Vania Lucia Loro

Study Type : Animal Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Biocide : CK(7) : AC(3)

Roundup contains compounds which exhibit significant toxicity to bacteria, microalgae, protozoa and crustaceans. - GMI Summary

Pubmed Data : Chemosphere. 2003 Aug;52(7):1189-97. PMID: 12821000

Article Published Date : Aug 01, 2003

Authors : Martin T K Tsui, L M Chu

Study Type : In Vitro Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Isopropylamine (IPA) : CK(4) : AC(4), Polyoxyethylene amine : CK(12) : AC(7), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Biocide : CK(7) : AC(3)

Topic: Hepatotoxic

Acute exposure of a glyphosate-based herbicide results in severe damage to the liver of fish. - GMI Summary

Pubmed Data : Environ Toxicol Pharmacol. 2012 May 31 ;34(2):388-396. Epub 2012 May 31. PMID: 22743578

Article Published Date : May 30, 2012

Authors : Natália S Shiogiri, Marcelo G Paulino, Silvia P Carraschi, Flávia G Baraldi, Claudinei da Cruz, Marisa Narciso Fernandes

Study Type : Environmental
Additional Links
Problem Substances : Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Biocide : CK(7) : AC(3), Hepatotoxic : CK(283) : AC(80)

Roundup causes oxidative stress in liver and inhibits acetylcholinesterase in muscle and brain of a neotropical fish. - GMI Summary

Pubmed Data : Chemosphere. 2010 Jan;78(3):294-9. Epub 2009 Nov 11. PMID: 19910015

Article Published Date : Jan 01, 2010

Authors : Kathya A Modesto, Cláudia B R Martinez

Study Type : Animal Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570

Article Published Date : Oct 01, 2009

Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12),

Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308
Article Published Date : Jan 01, 2011
Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)

Glyphosphate has liver damaging properties, - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2010;5:29. Epub 2010 Oct 27. PMID: 20979644
Article Published Date : Jan 01, 2010
Authors : Céline Gasnier, Nora Benachour, Emilie Clair, Carine Travert, Frédéric Langlois, Claire Laurant, Cécile Decroix-Laporte, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80)

Topic: Bioaccumulator

Endocrine and toxic effects of Roundup, not just glyphosate, can be observed in mammals, and Roundup adjuvants enhance glyphosate bioavailability and/or bioaccumulation. - GMI Summary

Pubmed Data : Environ Health Perspect. 2005 Jun;113(6):716-20. PMID: 15929894
Article Published Date : Jun 01, 2005
Authors : Sophie Richard, Safa Moslemi, Herbert Sipahutar, Nora Benachour, Gilles-Eric Seralini
Study Type : Animal Study
Additional Links
Additional Keywords : Drug-Plant-Vitamin Synergies : CK(1011) : AC(268)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23), Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81)

The glyphosate-based formula Roundup sigificantly increases the bioaccumulation of mercury in water fleas. - GMI Summary

Pubmed Data : Environ Pollut. 2005 Nov;138(1):59-68. PMID: 15878796
Article Published Date : Nov 01, 2005
Authors : Martin T K Tsui, Wen-Xiong Wang, L M Chu
Study Type : Animal Study
Additional Links
Diseases : Mercury Poisoning : CK(162) : AC(44)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23)

Glyphosphate increases the bioaccumulation of depleted uranium in plants 17 fold. - GMI Summary

Pubmed Data : Int J Phytoremediation. 2010 Aug;12(6):550-61. PMID: 21166280
Article Published Date : Aug 01, 2010
Authors : Elena Sevostianova, William C Lindemann, April L Ulery, Marta D Remmenga
Study Type : In Vitro Study
Additional Links
Diseases : Uranium Poisoning : CK(28) : AC(19)
Additional Keywords : Problem Substance Synergy : CK(5) : AC(3)
Problem Substances : Glyphosate : CK(365) : AC(116), Uranium : CK(46) : AC(21)
Adverse Pharmacological Actions : Bioaccumulator : CK(104) : AC(23)

Topic: Oxidant

Roundup causes oxidative stress in liver and inhibits acetylcholinesterase in muscle and brain of a neotropical fish. - GMI Summary

Pubmed Data : Chemosphere. 2010 Jan;78(3):294-9. Epub 2009 Nov 11. PMID: 19910015
Article Published Date : Jan 01, 2010
Authors : Kathya A Modesto, Cláudia B R Martinez
Study Type : Animal Study
Additional Links
Additional Keywords : Environmental Pollutant : CK(32) : AC(15)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aquacidal : CK(2) : AC(1), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

Glyphosphate exhibits toxicity as very low concentrations. - GMI Summary

Pubmed Data : Ecotoxicology. 2011 Jan;20(1):255-63. Epub 2010 Nov 18. PMID: 21086158
Article Published Date : Jan 01, 2011
Authors : Bibiana Kaiser Dutra, Felipe Amorim Fernandes, Daniela Motta Failace, Guendalina Turcato Oliveira
Study Type : In Vitro Study
Additional Links
Diseases : Lipid Peroxidation : CK(403) : AC(127), Oxidative Stress : CK(1945) : AC(710)
Additional Keywords : Ecotoxicology: Glyphosate : CK(17) : AC(9)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Oxidant : CK(104) : AC(37)

Topic: Teratogenic

Maternal exposure to agrochemicals (such as glyphosate) during pregnancy induces a variety of functional abnormalities in the specific activity of the enzymes in the studied organs of the pregnant rats and their fetuses. - GMI Summary

Pubmed Data : Environ Res. 2001 Mar ;85(3):226-31. PMID: 11237511
Article Published Date : Mar 01, 2001
Authors : J Daruich, F Zirulnik, M S Gimenez
Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

The glyphosate herbicide Roundup exhibits teratogenic potential in rats. - GMI Summary

Pubmed Data : Toxicol Lett. 2003 Apr 30;142(1-2):45-52. PMID: 12765238
Article Published Date : Apr 30, 2003
Authors : Eliane Dallegrave, Fabiana DiGiorgio Mantese, Ricardo Soares Coelho, Janaina Drawans Pereira, Paulo Roberto Dalsenter, Augusto Langeloh
Study Type : Animal Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(478) : AC(81), Teratogenic : CK(304) : AC(59)

Topic: Clastogenic

The environmental metabolite of glyphosate, Aminomethylphosphonic acid, exhibits genotoxicity. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Mar ;72(3):834-7. Epub 2008 Nov 14. PMID: 19013644
Article Published Date : Mar 01, 2009
Authors : F Mañas, L Peralta, J Raviolo, H García Ovando, A Weyers, L Ugnia, M Gonzalez Cid, I Larripa, N Gorla
Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(711) : AC(293), Liver Cancer : CK(1641) : AC(266)
Problem Substances : Aminomethylphosphonic acid : CK(12) : AC(5), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Clastogenic : CK(6) : AC(2), Genotoxic : CK(146) : AC(61)

Topic: Acetylcholinesterase inhibitor (xenobiotic)

"Sublethal effects of waterborne herbicides in tropical freshwater fish." - GMI Summary

Pubmed Data : Bull Environ Contam Toxicol. 2011 Dec ;87(6):603-7. Epub 2011 Oct 8. PMID: 21984662
Article Published Date : Nov 30, 2011
Authors : Stéfani Cibele Rossi, Manuela Dreyer da Silva, Laercio Dante Stein Piancini, Ciro Alberto Oliveira Ribeiro, Marta Margarete Cestari, Helena Cristina Silva de Assis
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(2) : AC(1), Glutathione S-transferase Inducer (xenobiotic) : CK(2) : AC(1)

Glyphosate exposure of the fish (Cnesterodon decemmaculatus) to environmentally relevant concentrations of glyphosate may cause neurotoxicity. - GMI Summary

Pubmed Data : Bull Environ Contam Toxicol. 2012 Jan ;88(1):6-9. PMID: 22002176
Article Published Date : Dec 31, 2011
Authors : Renata J Menéndez-Helman, Gisele V Ferreyroa, Maria dos Santos Afonso, Alfredo Salibián
Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(2) : AC(1), Aquacidal : CK(2) : AC(1), Neurotoxic : CK(1076) : AC(179)

Topic: Endocrine Disruptor: Testes

Pesticide-induced decrease in rat testicular steroidogenesis is differentially prevented by lipoate and tocopherol. - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2013 May ;91:129-38. Epub 2013 Mar 7. PMID: 23465731
Article Published Date : Apr 30, 2013
Authors : Mariana Astiz, Graciela E Hurtado de Catalfo, Marcela N García, Susana M Galletti, Ana L Errecalde, María J T de Alaniz, Carlos A Marra
Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(384) : AC(82), Vitamin E: alpha tocopherol : CK(1287) : AC(222)
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Infertility: Male : CK(209) : AC(52)
Pharmacological Actions : Antioxidants : CK(3653) : AC(1318)
Problem Substances : Glyphosate : CK(365) : AC(116), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

"A glyphosate-based herbicide induces necrosis and apoptosis in mature rat testicular cells in vitro, and testosterone decrease at lower levels." - GMI Summary

Pubmed Data : Toxicol In Vitro. 2011 Dec 19. Epub 2011 Dec 19. PMID: 22200534
Article Published Date : Dec 19, 2011
Authors : Emilie Clair, Robin Mesnage, Carine Travert, Gilles-Éric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12), Testosterone: Too Low : CK(369) : AC(70)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(1) : AC(1)

Topic: Mutagenic

Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines at exceedingly small concentrations (.5 ppm to 10 ppm). - GMI Summary

Pubmed Data : Toxicology. 2009 Aug 21;262(3):184-91. Epub 2009 Jun 17. PMID: 19539684
Article Published Date : Aug 21, 2009
Authors : Céline Gasnier, Coralie Dumont, Nora Benachour, Emilie Clair, Marie-Christine Chagnon, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Additional Keywords : Estrogen Receptor Beta : CK(24) : AC(11)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Cytotoxic : CK(73) : AC(35), Endocrine Disruptor : CK(478) : AC(81), Mutagenic : CK(22) : AC(11)

Roundup herbicide and its active ingredient glyphosate isopropylamine is genotoxic. - GMI Summary

Pubmed Data : Mutat Res. 1993 Jun;300(1):29-36. PMID: 7683765
Article Published Date : Jun 01, 1993
Authors : J Rank, A G Jensen, B Skov, L H Pedersen, K Jensen
Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Isopropylamine (IPA) : CK(4) : AC(4), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Mutagenic : CK(22) : AC(11)

Topic: Cell Cycle Inhibitor

"Formulated glyphosate activates the DNA-response checkpoint of the cell cycle leading to the prevention of G2/M transition." - GMI Summary

Pubmed Data : Toxicol Sci. 2004 Dec ;82(2):436-42. Epub 2004 Sep 16. PMID: 15375296
Article Published Date : Dec 01, 2004
Authors : Julie Marc, Robert Bellé, Julia Morales, Patrick Cormier, Odile Mulner-Lorillon
Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35)

A glyphosate-based pesticide impinges on transcription. - GMI Summary

Pubmed Data : Toxicol Appl Pharmacol. 2005 Feb 15 ;203(1):1-8. PMID: 15694458
Article Published Date : Feb 15, 2005
Authors : Julie Marc, Magali Le Breton, Patrick Cormier, Julia Morales, Robert Bellé, Odile Mulner-Lorillon
Study Type : In Vitro Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116), Polyoxyethylene amine : CK(12) : AC(7)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35)

Glyphosate-based pesticides adversely affect cell cycle regulation at concentrations 500 to 4000 times lower than used in agriculatural applications. - GMI Summary

Pubmed Data : Biol Cell. 2004 Apr ;96(3):245-9. PMID: 15182708
Article Published Date : Apr 01, 2004
Authors : Julie Marc, Odile Mulner-Lorillon, Robert Bellé
Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(711) : AC(293)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Cell Cycle Inhibitor : CK(3) : AC(1), Cytotoxic : CK(73) : AC(35), Genotoxic : CK(146) : AC(61)

Topic: Immunosuppressive

Glyphosate suppresses the antagonistic effect of Enterococcus spp. on Clostridium botulinum. - GMI Summary

Pubmed Data : Anaerobe. 2013 Feb 6. Epub 2013 Feb 6. PMID: 23396248
Article Published Date : Feb 05, 2013

Authors : Monika Krüger, Awad Ali Shehata, Wieland Schrödl, Arne Rodloff
Study Type : In Vitro Study, Review
Additional Links
Diseases : Botulism : CK(1) : AC(1), Botulism: Infantile : CK(1) : AC(1)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Immunosuppressive : CK(155) : AC(23)

Topic: Necrotic

Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. - GMI Summary

Pubmed Data : Chem Res Toxicol. 2009 Jan;22(1):97-105. PMID: 19105591
Article Published Date : Jan 01, 2009
Authors : Nora Benachour, Gilles-Eric Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Necrotic : CK(5) : AC(3)

Topic: Apoptotic

"Effect of pesticides on cell survival in liver and brain rat tissues." - GMI Summary

Pubmed Data : Ecotoxicol Environ Saf. 2009 Oct ;72(7):2025-32. Epub 2009 Jun 2. PMID: 19493570
Article Published Date : Oct 01, 2009
Authors : Mariana Astiz, María J T de Alaniz, Carlos Alberto Marra
Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(475) : AC(175), Glyphosate Toxicity : CK(22) : AC(12), Lipid Peroxidation : CK(403) : AC(127), Neurotoxicity : CK(37) : AC(15), Parkinson Disease : CK(543) : AC(79), Pesticide Toxicity : CK(147) : AC(45)
Problem Substances : Dimethoate : CK(3) : AC(1), Glyphosate : CK(365) : AC(116), Pesticides : CK(699) : AC(70), Zineb : CK(1) : AC(1)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Hepatotoxic : CK(283) : AC(80), Neurotoxic : CK(1076) : AC(179), Oxidant : CK(104) : AC(37)

A commercial formulation of glyphosate inhibits proliferation and differentiation to adipocytes and induces programmed cell death in 3T3-L1 fibroblasts. - GMI Summary

Pubmed Data : Toxicol In Vitro. 2012 Apr 21. Epub 2012 Apr 21. PMID: 22546541
Article Published Date : Apr 21, 2012
Authors : Claudia N Martini, Matías Gabrielli, María Del C Vila
Study Type : In Vitro Study
Additional Links
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Apoptotic : CK(8) : AC(7), Cytotoxic : CK(73) : AC(35)

Topic: Aromatase Disruptor

Roundup exposure may adversely affect human reproduction and fetal development in case of contamination. - GMI Summary

Pubmed Data : Arch Environ Contam Toxicol. 2007 Jul;53(1):126-33. Epub 2007 May 4. PMID: 17486286
Article Published Date : Jul 01, 2007
Authors : N Benachour, H Sipahutar, S Moslemi, C Gasnier, C Travert, G E Séralini
Study Type : In Vitro Study
Additional Links
Diseases : Endocrine Diseases : CK(13) : AC(3), Prenatal Chemical Exposures : CK(322) : AC(86)
Problem Substances : Glyphosate : CK(365) : AC(116), Roundup (herbicide) : CK(365) : AC(116)
Adverse Pharmacological Actions : Aromatase Disruptor : CK(1) : AC(1), Endocrine Disruptor : CK(478) : AC(81)

Topic: Carcinogenic

Glyphosate induces human breast cancer cells growth via estrogen receptors. - GMI Summary

Pubmed Data : Food Chem Toxicol. 2013 Jun 8. Epub 2013 Jun 8. PMID: 23756170
Article Published Date : Jun 07, 2013
Authors : Siriporn Thongprakaisang, Apinya Thiantanawat, Nuchanart Rangkadilok, Tawit Suriyo, Jutamaad Satayavivad
Study Type : In Vitro Study
Additional Links
Diseases : Breast Cancer : CK(2361) : AC(621), Breast Cancer: Chemically-Induced : CK(5) : AC(3), Breast Cancer: estrogen receptor alpha-positive : CK(3) : AC(2)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Carcinogenic : CK(912) : AC(117), Estrogenic : CK(59) : AC(12)

Topic: Estrogenic

Glyphosate induces human breast cancer cells growth via estrogen receptors. - GMI Summary

Pubmed Data : Food Chem Toxicol. 2013 Jun 8. Epub 2013 Jun 8. PMID: 23756170
Article Published Date : Jun 07, 2013
Authors : Siriporn Thongprakaisang, Apinya Thiantanawat, Nuchanart Rangkadilok, Tawit Suriyo, Jutamaad Satayavivad
Study Type : In Vitro Study
Additional Links
Diseases : Breast Cancer : CK(2361) : AC(621), Breast Cancer: Chemically-Induced : CK(5) : AC(3), Breast Cancer: estrogen receptor alpha-positive : CK(3) : AC(2)
Problem Substances : Glyphosate : CK(365) : AC(116), Glyphosate formulations : CK(380) : AC(118)
Adverse Pharmacological Actions : Carcinogenic : CK(912) : AC(117), Estrogenic : CK(59) : AC(12)

Topic: Glutathione Down-Regulation

Ginkgo biloba protects against glyphosate toxicity in mice. - GMI Summary

Pubmed Data : J Med Food. 2011 Aug 22. Epub 2011 Aug 22. PMID: 21859351
Article Published Date : Aug 22, 2011
Authors : Kültiğin Cavuşoğlu, Kürşad Yapar, Ertan Oruç, Emine Yalçın
Study Type : Animal Study
Additional Links
Substances : Ginkgo biloba : CK(530) : AC(104)
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(4) : AC(2), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Topic: Glutathione S-transferase Inducer (xenobiotic)

"Sublethal effects of waterborne herbicides in tropical freshwater fish." - GMI Summary

Pubmed Data : Bull Environ Contam Toxicol. 2011 Dec ;87(6):603-7. Epub 2011 Oct 8. PMID: 21984662

Article Published Date : Nov 30, 2011

Authors : Stéfani Cibele Rossi, Manuela Dreyer da Silva, Laercio Dante Stein Piancini, Ciro Alberto Oliveira Ribeiro, Marta Margarete Cestari, Helena Cristina Silva de Assis

Study Type : Animal Study
Additional Links
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(2) : AC(1), Glutathione S-transferase Inducer (xenobiotic) : CK(2) : AC(1)

Topic: Malondialdehyde (MDA) Up-Regulation

Ginkgo biloba protects against glyphosate toxicity in mice. - GMI Summary

Pubmed Data : J Med Food. 2011 Aug 22. Epub 2011 Aug 22. PMID: 21859351

Article Published Date : Aug 22, 2011

Authors : Kültiğin Cavuşoğlu, Kürşad Yapar, Ertan Oruç, Emine Yalçın

Study Type : Animal Study
Additional Links
Substances : Ginkgo biloba : CK(530) : AC(104)
Diseases : Glyphosate Toxicity : CK(22) : AC(12)
Problem Substances : Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Glutathione Down-Regulation : CK(4) : AC(2), Malondialdehyde (MDA) Up-Regulation : CK(2) : AC(1)

Topic: Nephrotoxic

Clear toxicities of pollutants were observed cell lines at very low sub-agricultural dilutions. - GMI Summary

Pubmed Data : J Occup Med Toxicol. 2011;6(1):3. Epub 2011 Jan 20. PMID: 21251308

Article Published Date : Jan 01, 2011

Authors : Céline Gasnier, Claire Laurant, Cécile Decroix-Laporte, Robin Mesnage, Emilie Clair, Carine Travert, Gilles-Eric Séralini

Study Type : In Vitro Study
Additional Links
Diseases : Chemical Exposure : CK(49) : AC(15), Chemically-Induced Liver Damage : CK(475) : AC(175), Kidney Damage : CK(120) : AC(42), Liver Damage : CK(597) : AC(213)
Problem Substances : Bisphenol A : CK(217) : AC(54), Glyphosate : CK(365) : AC(116)
Adverse Pharmacological Actions : Hepatotoxic : CK(283) : AC(80), Nephrotoxic : CK(162) : AC(38)