

Appendix F – List of in vivo toxicokinetic and toxicity studies retrieved in the literature search

Several of the listed studies can also include in vitro assays that were not considered further in the assessment.

| Author | Title | year |
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| Abbasi-Oshaghi, E.,Mirzaei, F.,Pourjafar, M. | NLRP3 inflammasome, oxidative stress, and apoptosis induced in the intestine and liver of rats treated with titanium dioxide nanoparticles: in vivo and in vitro study | 2019 |
| Abdelazim, S. A.,Darwish, H. A.,Ali, S. A.,Rizk, M. Z.,Kadry, M. O. | Potential antifibrotic and angiostatic impact of idebenone, carnosine and vitamin E in nano-sized titanium dioxide-induced liver injury | 2015 |
| Abdou, K. H.,Moselhy, W. A.,Mohamed, H. M.,El-Nahass, E. S.,Khalifa, A. G. | Moringa oleifera Leaves Extract Protects Titanium Dioxide Nanoparticles-Induced Nephrotoxicity via Nrf2/HO-1 Signaling and Amelioration of Oxidative Stress | 2019 |
| Aijie, C.,Huimin, L.,Jia, L.,Lingling, O.,Limin, W.,Junrong, W.,Xuan, L.,Xue, H.,Longquan, S. | Central neurotoxicity induced by the instillation of ZnO and TiO ₂ nanoparticles through the taste nerve pathway | 2017 |
| Ali, S. A.,Rizk, M. Z.,Hamed, M. A.,Aboul-Ela, E. I.,El-Rigal, N. S.,Aly, H. F.,Abdel-Hamid, A. Z. | Assessment of titanium dioxide nanoparticles toxicity via oral exposure in mice: effect of dose and particle size | 2019 |
| Alidadi, H.,Khorsandi, L.,Shirani, M. | Effects of Quercetin on Tubular Cell Apoptosis and Kidney Damage in Rats Induced by Titanium Dioxide Nanoparticles | 2018 |
| Ammendolia, M. G.,Iosi, F.,Maranghi, F.,Tassinari, R.,Cubadda, F.,Aureli, F.,Raggi, A.,Superti, F.,Mantovani, A.,De Berardis, B. | Short-term oral exposure to low doses of nano-sized TiO ₂ and potential modulatory effects on intestinal cells | 2017 |
| Asghari, A.,Hosseini, M.,Beheshti, F.,Shafei, M. N.,Mehri, S. | Inducible nitric oxide inhibitor aminoguanidine, ameliorated oxidative stress, interleukin-6 concentration and improved brain-derived neurotrophic factor in the brain tissues of neonates born from titanium dioxide nanoparticles exposed rats | 2019 |
| Azim, S. A.,Darwish, H. A.,Rizk, M. Z.,Ali, S. A.,Kadry, M. O. | Amelioration of titanium dioxide nanoparticles-induced liver injury in mice: possible role of some antioxidants | 2015 |
| Bettini, S.,Boutet-Robinet, E.,Cartier, C.,Comera, C.,Gaultier, E.,Dupuy, J.,Naud, N.,Tache, S.,Grysan, P.,Reguer, S.,Thieriet, N.,Refregiers, M.,Thiaudiere, D.,Cravedi, J. P.,Carriere, M.,Audinot, J. N.,Pierre, F. H.,Guzylack-Piriou, L.,Houdeau, E. | Food-grade TiO ₂ impairs intestinal and systemic immune homeostasis, initiates preneoplastic lesions and promotes aberrant crypt development in the rat colon | 2017 |
| Blevins, L. K.,Crawford, R. B.,Bach, A.,Rizzo, M. D.,Zhou, J.,Henriquez, J. E.,Khan, Dmio,Sermet, S.,Arnold, L.,Pennington, K. L.,Souza, N. P.,Cohen, S. M.,Kaminski, N. E. | Evaluation of immunologic and intestinal effects in rats administered an E 171-containing diet, a food grade titanium dioxide (TiO ₂) | 2019 |
| Cai, J.,Zang, X.,Wu, Z.,Liu, J.,Wang, D. | Translocation of transition metal oxide nanoparticles to breast milk and offspring: The necessity of bridging mother-offspring-integration toxicological assessments | 2019 |
| Canli, E. G.,Atli, G.,Canli, M. | Response of the antioxidant enzymes of the erythrocyte and alterations in the serum biomarkers in rats following oral administration of nanoparticles | 2017 |
| Canli, E. G.,Gumus, C.,Canli, M.,Ila, H. B. | The effects of titanium nanoparticles on enzymatic and non-enzymatic biomarkers in female Wistar rats | 2020 |

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| Canli, E. G., Ila, H. B., Canli, M. | Response of the antioxidant enzymes of rats following oral administration of metal-oxide nanoparticles (Al2O3, CuO, TiO ₂) | 2019 |
| Chakrabarti, S., Goyary, D., Karmakar, S., Chattopadhyay, P. | Exploration of cytotoxic and genotoxic endpoints following sub-chronic oral exposure to titanium dioxide nanoparticles | 2019 |
| Chen, Z., Han, S., Zhou, D., Zhou, S., Jia, G. | Effects of oral exposure to titanium dioxide nanoparticles on gut microbiota and gut-associated metabolism <i>in vivo</i> | 2019 |
| Chen, Z., Wang, Y., Wang, X., Zuo, L., Chen, S., Tang, S., Zhao, L., Luan, X., Jia, G. | Effect of titanium dioxide nanoparticles on glucose homeostasis after oral administration | 2018 |
| Chen, Z., Wang, Y., Zhuo, L., Chen, S., Zhao, L., Chen, T., Li, Y., Zhang, W., Gao, X., Li, P., Wang, H., Jia, G. | Interaction of titanium dioxide nanoparticles with glucose on young rats after oral administration | 2015 |
| Chen, Z., Wang, Y., Zhuo, L., Chen, S., Zhao, L., Luan, X., Wang, H., Jia, G. | Effect of titanium dioxide nanoparticles on the cardiovascular system after oral administration | 2015 |
| Chen, Z., Zhou, D., Han, S., Zhou, S., Jia, G. | Hepatotoxicity and the role of the gut-liver axis in rats after oral administration of titanium dioxide nanoparticles | 2019 |
| Chen, Z., Zhou, D., Wang, Y., Zhao, L., Hu, G., Liu, J., Feng, H., Long, C., Yan, T., Zhou, S., Jia, G. | Combined effect of titanium dioxide nanoparticles and glucose on the cardiovascular system in young rats after oral administration | 2019 |
| Chen, Z., Zhou, D., Zhou, S., Jia, G. | Gender difference in hepatic toxicity of titanium dioxide nanoparticles after subchronic oral exposure in Sprague-Dawley rats | 2019 |
| Dekanski, D., Spremo-Potparevic, B., Bajic, V., Zivkovic, L., Topalovic, D., Sredojevic, D., N., Lazic, V., Nedeljkovic, J. M. | Acute toxicity study in mice of orally administrated TiO ₂ nanoparticles functionalized with caffeic acid | 2018 |
| Disdier, C., Devoy, J., Cosnefroy, A., Chalansonnet, M., Herlin-Boime, N., Brun, E., Lund, A., Mabondzo, A. | Tissue biodistribution of intravenously administrated titanium dioxide nanoparticles revealed blood-brain barrier clearance and brain inflammation in rat | 2015 |
| Donner, E. M., Myhre, A., Brown, S. C., Boatman, R., Warheit, D. B. | In vivo micronucleus studies with 6 titanium dioxide materials (3 pigment-grade & 3 nanoscale) in orally-exposed rats | 2016 |
| Ebrahimzadeh Bideskan, A., Mohammadipour, A., Fazel, A., Haghiri, H., Rafatpanah, H., Hosseini, M., Rajabzadeh, A. | Maternal exposure to titanium dioxide nanoparticles during pregnancy and lactation alters offspring hippocampal mRNA BAX and Bcl-2 levels, induces apoptosis and decreases neurogenesis | 2017 |
| El-Bassyouni, G. T., Eshak, M. G., Barakat, I. A. H., Khalil, W. K. B. | Immunotoxicity evaluation of novel bioactive composites in male mice as promising orthopaedic implants | 2017 |
| El-Din, E. A. A., Mostafa, H. E., Samak, M. A., Mohamed, E. M., El-Shafei, D. A. | Could curcumin ameliorate titanium dioxide nanoparticles effect on the heart? A histopathological, immunohistochemical, and genotoxic study | 2019 |
| Elgrably, D., Beaudouin, R., Jbilou, N., Floriani, M., Pery, A., Rogerieux, F., Lacroix, G. | Biodistribution and Clearance of TiO ₂ Nanoparticles in Rats after Intravenous Injection | 2015 |
| Elnagar, A. M. B., Ibrahim, A., Soliman, A. M. | Histopathological Effects of Titanium Dioxide Nanoparticles and The Possible Protective Role of N-Acetylcysteine on The Testes of Male Albino Rats | 2018 |
| Fadda, L. M., Ali, H. M., Mohamed, A. M., Hagar, H. | Prophylactic administration of carnosine and melatonin abates the incidence of apoptosis, inflammation, and DNA damage induced by titanium dioxide nanoparticles in rat livers | 2019 |
| Fadda, L. M., Hagar, H., Mohamed, A. M., Ali, H. M. | Quercetin and Idebenone Ameliorate Oxidative Stress, Inflammation, DNA damage, and Apoptosis Induced by Titanium Dioxide Nanoparticles in Rat Liver | 2018 |
| Fadda, L. M., Mohamed, A. M., Ali, H. M., Hagar, H., Aldossari, M. | Prophylactic administration of carnosine and melatonin abates the incidence of renal toxicity induced by an over dose of titanium dioxide nanoparticles | 2018 |

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| Fadoju, O.,Ogunsuyi, O.,Akanni, O.,Alabi, O.,Alimba, C.,Adaramoye, O.,Cambier, S.,Eswara, S.,Gutleb, A. C.,Bakare, A. | Evaluation of cytogenotoxicity and oxidative stress parameters in male Swiss mice co-exposed to titanium dioxide and zinc oxide nanoparticles | 2019 |
| Farrell, T. P.,Magnuson, B. | Absorption, Distribution and Excretion of Four Forms of Titanium Dioxide Pigment in the Rat | 2017 |
| Grissa, I.,Elghoul, J.,Ezzi, L.,Chakroun, S.,Kerkeni, E.,Hassine, M.,El Mir, L.,Mehdi, M.,Ben Cheikh, H.,Haouas, Z. | Anemia and genotoxicity induced by sub-chronic intragastric treatment of rats with titanium dioxide nanoparticles | 2015 |
| Grissa, I.,ElGhoul, J.,Mrimi, R.,Mir, L. E.,Cheikh, H. B.,Horcajada, P. | In deep evaluation of the neurotoxicity of orally administered TiO ₂ nanoparticles | 2020 |
| Grissa, I.,Ezzi, L.,Chakroun, S.,Mabrouk, A.,Saleh, A. B.,Braham, H.,Haouas, Z.,Cheikh, H. B. | Rosmarinus officinalis L. ameliorates titanium dioxide nanoparticles and induced some toxic effects in rats' blood | 2017 |
| Grissa, I.,Guezguez, S.,Ezzi, L.,Chakroun, S.,Sallem, A.,Kerkeni, E.,Elghoul, J.,El Mir, L.,Mehdi, M.,Cheikh, H. B.,Haouas, Z. | The effect of titanium dioxide nanoparticles on neuroinflammation response in rat brain | 2016 |
| Gu, N.,Hu, H.,Guo, Q.,Jin, S.,Wang, C.,Oh, Y.,Feng, Y.,Wu, Q. | Effects of oral administration of titanium dioxide fine-sized particles on plasma glucose in mice | 2015 |
| Hassanein, K. M.,El-Amir, Y. O. | Protective effects of thymoquinone and avenanthramides on titanium dioxide nanoparticles induced toxicity in Sprague-Dawley rats | 2017 |
| Hassanein, K. M. A.,El-Amir, Y. O. | Ameliorative effects of thymoquinone on titanium dioxide nanoparticles induced acute toxicity in rats | 2018 |
| Heringa, M. B.,Peters, R. J. B.,Bleys, Rlaw,van der Lee, M. K.,Tromp, P. C.,van Kesteren, P. C. E.,van Eijkeren, J. C. H.,Undas, A. K.,Oomen, A. G.,Bouwmeester, H. | Detection of titanium particles in human liver and spleen and possible health implications | 2018 |
| Hong, F.,Hong, J.,Wang, L.,Zhou, Y.,Liu, D.,Xu, B.,Yu, X.,Sheng, L. | Chronic exposure to nanoparticulate TiO ₂ causes renal fibrosis involving activation of the Wnt pathway in mouse kidney | 2015 |
| Hong, F.,Si, W.,Zhao, X.,Wang, L.,Zhou, Y.,Chen, M.,Ge, Y.,Zhang, Q.,Wang, Y.,Zhang, J. | TiO ₂ Nanoparticle Exposure Decreases Spermatogenesis via Biochemical Dysfunctions in the Testis of Male Mice | 2015 |
| Hong, F.,Wang, L. | Nanosized titanium dioxide-induced premature ovarian failure is associated with abnormalities in serum parameters in female mice | 2018 |
| Hong, F.,Wang, Y.,Zhou, Y.,Zhang, Q.,Ge, Y.,Chen, M.,Hong, J.,Wang, L. | Exposure to TiO ₂ Nanoparticles Induces Immunological Dysfunction in Mouse Testitis | 2016 |
| Hong, F.,Wu, N.,Ge, Y.,Zhou, Y.,Shen, T.,Qiang, Q.,Zhang, Q.,Chen, M.,Wang, Y.,Wang, L.,Hong, J. | Nanosized titanium dioxide resulted in the activation of TGF-beta/Smads/p38MAPK pathway in renal inflammation and fibration of mice | 2016 |
| Hong, F.,Wu, N.,Zhao, X.,Tian, Y.,Zhou, Y.,Chen, T.,Zhai, Y.,Ji, L. | Titanium dioxide nanoparticle-induced dysfunction of cardiac hemodynamics is involved in cardiac inflammation in mice | 2016 |
| Hong, F.,Wu, N.,Zhou, Y.,Ji, L.,Chen, T.,Wang, L. | Gastric toxicity involving alterations of gastritis-related protein expression in mice following long-term exposure to nano TiO ₂ | 2017 |
| Hong, F.,Zhao, X.,Si, W.,Ze, Y.,Wang, L.,Zhou, Y.,Hong, J.,Yu, X.,Sheng, L.,Liu, D.,Xu, B.,Zhang, J. | Decreased spermatogenesis led to alterations of testis-specific gene expression in male mice following nano-TiO ₂ exposure | 2015 |

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| Hong, F., Zhou, Y., Ji, J., Zhuang, J., Sheng, L., Wang, L. | Nano-TiO ₂ Inhibits Development of the Central Nervous System and Its Mechanism in Offspring Mice | 2018 |
| Hong, F., Zhou, Y., Zhao, X., Sheng, L., Wang, L. | Maternal exposure to nanosized titanium dioxide suppresses embryonic development in mice | 2017 |
| Hong, F., Zhou, Y., Zhou, Y., Wang, L. | Immunotoxic effects of thymus in mice following exposure to nanoparticulate TiO ₂ | 2017 |
| Hu, H., Fan, X., Yin, Y., Guo, Q., Yang, D., Wei, X., Zhang, B., Liu, J., Wu, Q., Oh, Y., Chen, K., Feng, Y., Hou, L., Li, L., Gu, N. | Mechanisms of titanium dioxide nanoparticle-induced oxidative stress and modulation of plasma glucose in mice | 2019 |
| Hu, H., Guo, Q., Wang, C., Ma, X., He, H., Oh, Y., Feng, Y., Wu, Q., Gu, N. | Titanium dioxide nanoparticles increase plasma glucose via reactive oxygen species-induced insulin resistance in mice | 2015 |
| Hu, H., Li, L., Guo, Q., Jin, S., Zhou, Y., Oh, Y., Feng, Y., Wu, Q., Gu, N. | A mechanistic study to increase understanding of titanium dioxide nanoparticles-increased plasma glucose in mice | 2016 |
| Hu, H., Li, L., Guo, Q., Zong, H., Yan, Y., Yin, Y., Wang, Y., Oh, Y., Feng, Y., Wu, Q., Gu, N. | RNA sequencing analysis shows that titanium dioxide nanoparticles induce endoplasmic reticulum stress, which has a central role in mediating plasma glucose in mice | 2018 |
| Hu, H., Zhang, B., Li, L., Guo, Q., Yang, D., Wei, X., Fan, X., Liu, J., Wu, Q., Oh, Y., Feng, Y., Chen, K., Wang, C., Hou, L., Gu, N. | The toxic effects of titanium dioxide nanoparticles on plasma glucose metabolism are more severe in developing mice than in adult mice | 2019 |
| Huang, C., Sun, M., Yang, Y., Wang, F., Ma, X., Li, J., Wang, Y., Ding, Q., Ying, H., Song, H., Wu, Y., Jiang, Y., Jia, X., Ba, Q., Wang, H. | Titanium dioxide nanoparticles prime a specific activation state of macrophages | 2017 |
| Hussein, M. M. A., Gad, E., Ahmed, M. M., Arisha, A. H., Mahdy, H. F., Swelum, A. A., Tukur, H. A., Saadeldin, I. M. | Amelioration of titanium dioxide nanoparticle reprotoxicity by the antioxidants morin and rutin | 2019 |
| Jafari, A., Karimipour, M., Khaksar, M., R., Ghasemnejad-Berenji, M. | Protective effects of orally administered thymol against titanium dioxide nanoparticle-induced testicular damage | 2020 |
| Jafari, A., Rasmie, Y., Hajaghazadeh, M., Karimipour, M. | Hepatoprotective effect of thymol against subchronic toxicity of titanium dioxide nanoparticles: Biochemical and histological evidences | 2018 |
| Jia, X., Wang, S., Zhou, L., Sun, L. | The Potential Liver, Brain, and Embryo Toxicity of Titanium Dioxide Nanoparticles on Mice | 2017 |
| Jo, M. R., Yu, J., Kim, H. J., Song, J. H., Kim, K. M., Oh, J. M., Choi, S. J. | Titanium Dioxide Nanoparticle-Biomolecule Interactions Influence Oral Absorption | 2016 |
| Jones, K., Morton, J., Smith, I., Jurkschat, K., Harding, A. H., Evans, G. | Human in vivo and in vitro studies on gastrointestinal absorption of titanium dioxide nanoparticles | 2015 |
| Kandeil, M. A., Mohammed, E. T., Hashem, K. S., Aleya, L., Abdel-Daim, M. M. | Moringa seed extract alleviates titanium oxide nanoparticles (TiO ₂ -NPs)-induced cerebral oxidative damage, and increases cerebral mitochondrial viability | 2019 |
| Karimi, S., Khorsandi, L., Nejaddehbashi, F. | Protective effects of Curcumin on testicular toxicity induced by titanium dioxide nanoparticles in mice | 2019 |
| Karimipour, M., Zirak Javanmard, M., Ahmadi, A., Jafari, A. | Oral administration of titanium dioxide nanoparticle through ovarian tissue alterations impairs mice embryonic development | 2018 |
| Khan, S. T., Saleem, S., Ahamed, M., Ahmad, J. | Survival of probiotic bacteria in the presence of food grade nanoparticles from chocolates: an in vitro and in vivo study | 2019 |
| Khorsandi, L., Orazizadeh, M., Mansouri, E., Fakhredini, F. | Glycyrrhetic acid attenuated lipid peroxidation induced by titanium dioxide nanoparticles in rat liver | 2015 |
| Khorsandi, L., Orazizadeh, M., Mansouri, E., Hemadi, M., Moradi-Gharibvand, N. | Morphometric and stereological assessment of the effects of titanium dioxide nanoparticles on the mouse testicular tissue | 2016 |
| Khorsandi, L., Orazizadeh, M., Moradi-Gharibvand, N., Hemadi, M., Mansouri, E. | Beneficial effects of quercetin on titanium dioxide nanoparticles induced spermatogenesis defects in mice | 2017 |

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| Kim, M. K.,Lee, J. A.,Jo, M. R.,Choi, S. J. | Bioavailability of Silica, Titanium Dioxide, and Zinc Oxide Nanoparticles in Rats | 2016 |
| Kreyling, W. G.,Holzwarth, U.,Haberl, N.,Kozempel, J.,Hirn, S.,Wenk, A.,Schleh, C.,Schaffler, M.,Lipka, J.,Semmler-Behnke, M.,Gibson, N. | Quantitative biokinetics of titanium dioxide nanoparticles after intravenous injection in rats: Part 1 | 2017 |
| Kreyling, W. G.,Holzwarth, U.,Schleh, C.,Kozempel, J.,Wenk, A.,Haberl, N.,Hirn, S.,Schaffler, M.,Lipka, J.,Semmler-Behnke, M.,Gibson, N. | Quantitative biokinetics of titanium dioxide nanoparticles after oral application in rats: Part 2 | 2017 |
| Kumar, S.,Meena, R.,Paulraj, R. | Role of Macrophage (M1 and M2) in Titanium-Dioxide Nanoparticle-Induced Oxidative Stress and Inflammatory Response in Rat | 2016 |
| Latif, M. A.,Jabeen, F.,Ali, M.,Rasul, A.,Naz, S.,Akram, M. | Neurotoxic effects of titanium dioxide nanoparticles on the brain of male sprague dawley rats | 2019 |
| Lee, J.,Jeong, J. S.,Kim, S. Y.,Park, M. K.,Choi, S. D.,Kim, U. J.,Park, K.,Jeong, E. J.,Nam, S. Y.,Yu, W. J. | Titanium dioxide nanoparticles oral exposure to pregnant rats and its distribution | 2019 |
| Li, J.,Yang, S.,Lei, R.,Gu, W.,Qin, Y.,Ma, S.,Chen, K.,Chang, Y.,Bai, X.,Xia, S.,Wu, C.,Xing, G. | Oral administration of rutile and anatase TiO ₂ nanoparticles shifts mouse gut microbiota structure | 2018 |
| Li, X.,Song, L.,Hu, X.,Liu, C.,Shi, J.,Wang, H.,Zhan, L.,Song, H. | Inhibition of Epithelial-Mesenchymal Transition and Tissue Regeneration by Waterborne Titanium Dioxide Nanoparticles | 2018 |
| Li, Y.,Yan, J.,Ding, W.,Chen, Y.,Pack, L. M.,Chen, T. | Genotoxicity and gene expression analyses of liver and lung tissues of mice treated with titanium dioxide nanoparticles | 2017 |
| Mao, Z.,Li, Y.,Dong, T.,Zhang, L.,Zhang, Y.,Li, S.,Hu, H.,Sun, C.,Xia, Y. | Exposure to Titanium Dioxide Nanoparticles During Pregnancy Changed Maternal Gut Microbiota and Increased Blood Glucose of Rat | 2019 |
| Martins, A. D. C., Jr.,Azevedo, L. F.,de Souza Rocha, C. C.,Carneiro, M. F. H.,Venancio, V. P.,de Almeida, M. R.,Antunes, L. M. G.,de Carvalho Hott, R.,Rodrigues, J. L.,Ogunjimi, A. T.,Adeyemi, J. A.,Barbosa, F., Jr. | Evaluation of distribution, redox parameters, and genotoxicity in Wistar rats co-exposed to silver and titanium dioxide nanoparticles | 2017 |
| Meena, R.,Kajal, K.,R, P. | Cytotoxic and genotoxic effects of titanium dioxide nanoparticles in testicular cells of male wistar rat | 2015 |
| Miura, N.,Ohtani, K.,Hasegawa, T.,Yoshioka, H.,Hwang, G. W. | High sensitivity of testicular function to titanium nanoparticles | 2017 |
| Miura, N.,Ohtani, K.,Hasegawa, T.,Yoshioka, H.,Hwang, G. W. | Biphasic adverse effect of titanium nanoparticles on testicular function in mice | 2019 |
| Modrzynska, J.,Berthing, T.,Ravn-Haren, G.,Kling, K.,Mortensen, A.,Rasmussen, R. R.,Larsen, E. H.,Sabre, A. T.,Vogel, U.,Loeschner, K. | In vivo-induced size transformation of cerium oxide nanoparticles in both lung and liver does not affect long-term hepatic accumulation following pulmonary exposure | 2018 |
| Mohamed, H. R. | Estimation of TiO(2) nanoparticle-induced genotoxicity persistence and possible chronic gastritis-induction in mice | 2015 |
| Mohamed, H. R.,Hussien, N. A. | Genotoxicity Studies of Titanium Dioxide Nanoparticles (TiO ₂ NPs) in the Brain of Mice | 2016 |
| Mohammadipour, A.,Hosseini, M.,Fazel, A.,Haghiri, H.,Rafatpanah, H.,Pourganji, M.,Bideskan, A. E. | The effects of exposure to titanium dioxide nanoparticles during lactation period on learning and memory of rat offspring | 2016 |
| Mohammed, E. T.,Safwat, G. M. | Grape Seed Proanthocyanidin Extract Mitigates Titanium Dioxide Nanoparticle (TiO ₂ -NPs)-Induced Hepatotoxicity Through TLR-4/NF-kappaB Signaling Pathway | 2019 |

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| Moradi, A.,Ziamajidi, N.,Ghafourikhosroshahi, A.,Abbasalipourkabir, R. | Effects of vitamin A and vitamin E on attenuation of titanium dioxide nanoparticles-induced toxicity in the liver of male Wistar rats | 2019 |
| Morgan, A.,Galal, M. K.,Ogaly, H. A.,Ibrahim, M. A.,Abd-Elsalam, R. M.,Noshy, P. | Tiron ameliorates oxidative stress and inflammation in titanium dioxide nanoparticles induced nephrotoxicity of male rats | 2017 |
| Morgan, A.,Ibrahim, M. A.,Galal, M. K.,Ogaly, H. A.,Abd-Elsalam, R. M. | Innovative perception on using Tiron to modulate the hepatotoxicity induced by titanium dioxide nanoparticles in male rats | 2018 |
| Morgan, A. M.,Ibrahim, M. A.,Noshy, P. A. | Reproductive toxicity provoked by titanium dioxide nanoparticles and the ameliorative role of Tiron in adult male rats | 2017 |
| Mu, W.,Wang, Y.,Huang, C.,Fu, Y.,Li, J.,Wang, H.,Jia, X.,Ba, Q. | Effect of Long-Term Intake of Dietary Titanium Dioxide Nanoparticles on Intestine Inflammation in Mice | 2019 |
| Naserzadeh, P.,Ghanbari, F.,Ashtari, P.,Seydi, E.,Ashtari, K.,Akbari, M. | Biocompatibility assessment of titanium dioxide nanoparticles in mice fetoplacental unit | 2018 |
| Niu, L.,Shao, M.,Liu, Y.,Hu, J.,Li, R.,Xie, H.,Zhou, L.,Shi, L.,Zhang, R.,Niu, Y. | Reduction of oxidative damages induced by titanium dioxide nanoparticles correlates with induction of the Nrf2 pathway by GSPE supplementation in mice | 2017 |
| Orazizadeh, M.,Daneshi, E.,Hashemitmar, M.,Absalan, F.,Khorsandi, L. | Protective effect of beta-carotene against titanium dioxide nanoparticles induced apoptosis in mouse testicular tissue | 2015 |
| Pele, L. C.,Thoree, V.,Brugggraber, S. F.,Koller, D.,Thompson, R. P.,Lomer, M. C.,Powell, J. J. | Pharmaceutical/food grade titanium dioxide particles are absorbed into the bloodstream of human volunteers | 2015 |
| Peters, R. J. B.,Oomen, A. G.,van Bemmel, G.,van Vliet, L.,Undas, A. K.,Munniks, S.,Bleys, Rlaw,Tromp, P. C.,Brand, W.,van der Lee, M. | Silicon dioxide and titanium dioxide particles found in human tissues | 2020 |
| Pinget, G.,Tan, J.,Janac, B.,Kaakoush, N. O.,Angelatos, A. S.,O'Sullivan, J.,Koay, Y. C.,Siervo, F.,Davis, J.,Divakarla, S. K.,Khanal, D.,Moore, R. J.,Stanley, D.,Chrzanowski, W.,Macia, L. | Impact of the Food Additive Titanium Dioxide (E171) on Gut Microbiota-Host Interaction | 2019 |
| Proquin, H.,Jetten, M. J.,Jonkhout, M. C. M.,Garduno-Balderas, L. G.,Briede, J. J.,de Kok, T. M.,Chirino, Y. I.,van Loveren, H. | Gene expression profiling in colon of mice exposed to food additive titanium dioxide (E171) | 2018 |
| Proquin, H.,Jetten, M. J.,Jonkhout, M. C. M.,Garduno-Balderas, L. G.,Briede, J. J.,de Kok, T. M.,van Loveren, H.,Chirino, Y. I. | Transcriptomics analysis reveals new insights in E171-induced molecular alterations in a mouse model of colon cancer | 2018 |
| Rizk, M. Z.,Ali, S. A.,Hamed, M. A.,El-Rigal, N. S.,Aly, H. F.,Salah, H. H. | Toxicity of titanium dioxide nanoparticles: Effect of dose and time on biochemical disturbance, oxidative stress and genotoxicity in mice | 2017 |
| Rizk, M. Z.,Ali, S. A.,Kadry, M. O.,Fouad, G. I.,Kamel, N. N.,Younis, E. A.,Gouda, S. M. | C-reactive Protein Signaling and Chromosomal Abnormalities in Nanotoxicity Induced via Different Doses of TiO ₂ (80 nm) Boost Liver Function | 2020 |
| Rodriguez-Escamilla, J. C.,Medina-Reyes, E. I.,Rodriguez-Ibarra, C.,Deciga-Alcaraz, A.,Flores-Flores, J. O.,Ganem-Rondero, A.,Rodriguez-Sosa, M.,Terrazas, L. I.,Delgado-Buenrostro, N. L.,Chirino, Y. I. | Food-grade titanium dioxide (E171) by solid or liquid matrix administration induces inflammation, germ cells sloughing in seminiferous tubules and blood-testis barrier disruption in mice | 2019 |
| Rossi, S.,Savi, M.,Mazzola, M.,Pinelli, S.,Alinovi, R.,Gennaccaro, L.,Pagliaro, | Subchronic exposure to titanium dioxide nanoparticles modifies cardiac structure and performance in spontaneously hypertensive rats | 2019 |

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| A.,Meraviglia, V.,Galetti, M.,Lozano-Garcia, O.,Rossini, A.,Frati, C.,Falco, A.,Quaini, F.,Bocchi, L.,Stilli, D.,Lucas, S.,Goldoni, M.,Macchi, E.,Mutti, A.,Miragoli, M. | | |
| Ruiz, P. A.,Moron, B.,Becker, H. M.,Lang, S.,Atrott, K.,Spalinger, M. R.,Scharl, M.,Wojtal, K. A.,Fischbeck-Terhalle, A.,Frey- Wagner, I.,Hausmann, M.,Kraemer, T.,Rogler, G. | Titanium dioxide nanoparticles exacerbate DSS-induced colitis: role of the NLRP3 inflammasome | 2017 |
| Shahin, N. N.,Mohamed, M. M. | Nano-sized titanium dioxide toxicity in rat prostate and testis: Possible ameliorative effect of morin | 2017 |
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