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EDITORIAL

Most cited articles: metal toxicity, oxidative stress control and induction as well as inhibition of cytochrome P450 enzymes

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Every year, the editors of the Archives of Toxicology review their most cited publications from the previous 2 years (Table 1). Currently, our most cited paper is a review article by Beyersmann and Hartwig (2008) on carcinogenic metal compounds. The authors, in this article, comprehensively describe the key mechanisms responsible for metal carcinogenicity, namely inhibition of DNA repair, deregulation of signal transduction and oxidative stress induction. Incidentally, oxidative stress control is one of the cutting-edge topics frequently published in our journal. Therefore, the editors invited Jose M. Matés and colleagues to present a review article (2008) on how reactive oxygen species can modify intracellular signalling pathways. Their contribution is the second most cited paper in our journal. Number three on our citation ranking list is the article by Olavi Pelkonen and colleagues (2008) focusing on the induction and inhibition of cytochrome P450 enzymes, including a comprehensive overview of the most relevant compounds. The most cited original article is a systematic study on tissue distribution and toxicity of titanium dioxide nanoparticles (Fabian et al. 2008). The take home messages of our most cited articles have been summarized in Table 1.

Table 1 Most cited articles in the Archives of Toxicology in 2008 and 2009

No.	Author	Take home message
1	Beyersmann and Hartwig 2008	This review highlights the three predominant mechanisms of carcinogenic metal compounds: induction of oxidative stressinhibition of DNA repair, deregulation of proliferation by induction of signalling pathways
2	Matés et al. 2008	This review summarizes the mechanisms underlying the modification of intracellular signalling pathways by reactive oxygen species
3	Pelkonen et al. 2008	This comprehensive article reviews inhibition and induction of CYP enzymes, provides lists of the most relevant compounds and discusses their importance in drug therapy
4	Lilienblum et al. 2008	The authors summarize the available in vitro test systems that have been established as alternatives for animal studies and discuss the possibilities and limitations of each test system. Despite some progress in the field of alternative methods, in vivo studies are still indispensable tools, especially with respect to health-related limit values

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Table 1 continued

No.	Author	Take home message
5	Fabian et al. 2008	Titanium dioxide nanoparticles were intravenously injected into rats. TiO_2 levels were highest in the liver, followed by spleen, lung and kidney. 5 mg/kg TiO_2 did not cause any toxic effects over 28 days
6	Verstraeten et al. 2008	Membrane biophysics alterations, deregulation of cell signalling, impairment of neurotransmission and oxidative stress are key mechanisms involved in aluminium and lead neurotoxicity
7	Glahn et al. 2008	Cadmium and cobalt cause cell cycle deregulation and increased steroid as well as xenobiotic metabolism in primary human bronchial epithelial cells in an in vivo relevant concentration range
8	Liebers et al. 2008	This review summarizes the mechanisms of endotoxin recognition and its effects on human health
9	Calabrese 2009	The author criticizes the widely applied toxic threshold model, suggesting it poorly predicts responses in the low dose zone
10	Schug et al. 2008	Sandwich cultures with rat hepatocytes can be applied to study methapyrilene-induced alterations in gene expression at in vivo relevant concentrations
11	Nishimura et al. 2008	Oxidative stress is critical in the development of fenofibrate-induced hepatocellular preneoplastic foci in rats
12	Manna et al. 2008	The triterpenoid saponin arjunolic acid protects against arsenic-induced cardiotoxicity in mice
13	Mahmud et al. 2009	Arsenic-induced eryptosis (apoptosis-like cell death of erythrocytes) by a Ca^{2+} and ceramide dependent mechanism
14	Tum and Borlak 2008	Gene expression profiling in human hepatocytes identifies early signals of hepatotoxicity
15	Yang et al. 2009	This review article addresses the controversial question whether tea polyphenols are anti-carcinogenic in humans
16	Westerink et al. 2008	The authors present in vitro systems for the identification of human and rat Ah receptor activators based on data from 119 compounds

Table 1 continued

No.	Author	Take home message
17	Cederbaum et al. 2009	CYP2E1 plays a crucial role in alcohol-induced liver toxicity
18	Adam and Laufs 2008	Many of the effects of statins are caused by inhibition of isoprenoids, which serve as attachments for small Rho GTPases to the cell membrane
19	Settels et al. 2008	Human CYP2E1 mediates formation of the carcinogenic metabolite glycidamide from acrylamide
20	Strassburg et al. 2008	This is a comprehensive review about the human UDP glucuronosyltransferase 1A gene family: nomenclature, genetic variants and disease relevance
21	Rezende et al. 2008	Polymorphisms of the human vitamin D receptor gene modulate circulating levels of lead in exposed subjects
22	Kehe et al. 2008	Poly(ADP-ribose) polymerase (PARP) contributes to cell fate decision between apoptosis and necrosis
23	Sugawara et al. 2008	Perinatal co-exposure to methylmercury and polychlorinated biphenyls produced no synergistic effects on neurobehavioral development in mice
24	Grotto et al. 2009	Low level sub-chronic administration of methylmercury causes hypertension in rats
25	Naraharisetti et al. 2008	No toxicological interaction between arsenic and malathion could be identified
26	Lankisch et al. 2008	The UDP-glucuronosyltransferase 1A3 gene is regulated by the Ah receptor
27	Son et al. 2008	Perfluorooctanoic acid, a widespread environmental pollutant, causes hepatotoxicity in mice
28	Dorn et al. 2008	The synthetic steroid tetrahydrogestrinone illegally used for doping in sports, induces micronuclei in V79 cells. Therefore, a genotoxic hazard for misusing the compounds by athletes cannot be ruled out
29	Florl and Schulz 2008	This review describes the role of chromosomal instability for progression of urothelial carcinomas
30	Khalil et al. 2008	Panax ginseng extract protects against EDTA-induced toxicity

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