

# Toxicology Research

A multi-disciplinary journal covering research in both fundamental and applied aspects of toxicology

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### Cover

See Stephen J. Fey *et al.*,  
pp. 163–172.

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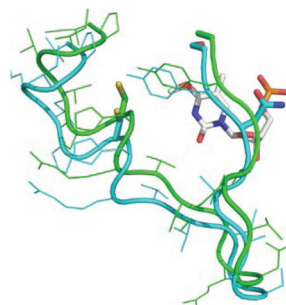
## COMMUNICATION

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### Engineering of a $O^6$ -alkylguanine-DNA alkyltransferase chimera and repair of $O^4$ -alkyl thymidine adducts and $O^6$ -alkylene-2'-deoxyguanosine cross-linked DNA

Francis P. McManus and Christopher J. Wilds\*

A soluble human  $O^6$ -alkylguanine-DNA alkyltransferase (hAGT) chimera was engineered which retained hAGT's ability to repair bulky  $O^6$ -alkylene-2'-deoxyguanosine interstrand cross-linked DNA damage and also displayed enhanced repair of various  $O^4$ -alkyl thymidine adducts.



## PAPERS

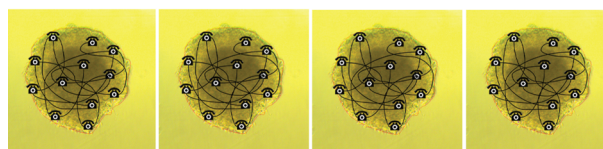
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### HepG2/C3A 3D spheroids exhibit stable physiological functionality for at least 24 days after recovering from trypsinisation

K. Wrzesinski, M. C. Magnone, L. Visby Hansen, M. Ehrhorn Kruse, T. Bergauer, M. Bobadilla, M. Gubler, J. Mizrahi, K. Zhang, C. M. Andreasen, K. Eyð Joensen, S. M. Andersen, J. Bastholm Olesen, O. B. Schaffalitzky de Muckadell and S. J. Fey\*

Spheroids exhibit stable physiological levels of urea, cholesterol, ATP and gene expression for at least 24 days.

### 3D Spheroid Cell Culture



21 days

28 days

35 days

42 days

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# Toxicology Research

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Toxicology Research is the official journal of the British Toxicology Society and the Chinese Society of Toxicology.

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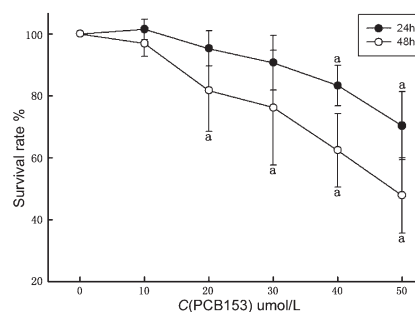
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### PCB153-induced oxidative stress and cell apoptosis on cultured rat Sertoli cells

Ming Gao, Nanxiang Wu,\* Yang Song, Lingzhi Jin, Jianlin Lou and He Tao

In this study, we explored the temporal characteristics of superoxide dismutase (SOD) activity, malondialdehyde (MDA) concentration, and the effect of oxidative stress on DNA damage, and cell apoptosis after exposure to 2,4,5,2',4',5'-hexachlorobiphenyl (PCB153) on cultured rat Sertoli cells (SC).

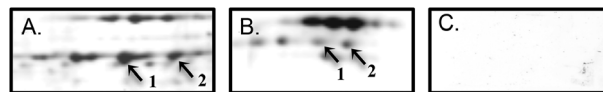


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### The atrazine metabolite diaminochlorotriazine suppresses LH release from murine LβT2 cells by suppressing GnRH-induced intracellular calcium transients

Gregory P. Dooley, Ronald B. Tjalkens and William H. Hanneman\*

The primary metabolite of the herbicide atrazine, diaminochlorotriazine, has been suggested to cause disruption in the hypothalamic–pituitary–gonadal axis leading to inhibition of luteinizing hormone release.



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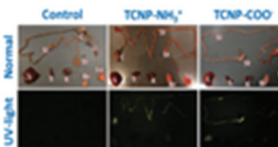
### Role of surface charge in bioavailability and biodistribution of tri-block copolymer nanoparticles in rats after oral exposure

Sourav Bhattacharjee,\* Antonius T. M. Marcelis, Han Zuilhof, Ruud A. Woutersen, Ivonne M. C. M. Rietjens and Gerrit M. Alink

Surface charge does not influence the bioavailability and biodistribution of tri-block copolymer nanoparticles *in vivo* after oral exposure.

#### *In vivo experiment with polymer nanoparticles (NPs)*

- ✓ Oral exposure
- ✓ 6 h exposure time
- ✓ Surface charge not important factor
- ✓ Liver shows maximum accumulation of NPs
- ✓ Little amount of NPs reach brain



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### DNA damage and repair of human skin keratinocytes concurrently exposed to pyrene derivatives and UVA light

Tracie Perkins Fullove and Hongtao Yu\*

Phototoxicity, DNA damage and repair caused by polycyclic aromatic hydrocarbons depend on their structure, photoreaction, light source, and interaction with cellular components.

