

Dr. Eva Frei

Department: Molecular Toxicology, Preventive Oncology

CV:

EVA FREI

Dr. rer. nat.

Personal

Date of birth: December 4, 1950

Place of birth: Nakuru, Kenia

Academic Education and Appointments

1973

Diploma in biochemistry, University of Bern, Switzerland

1978

Dr. rer. nat. chemistry (biochemistry), University of Bern, Switzerland

1978 – 1979

Postdoctoral fellow at Friedrich Miescher Institute, Basel, Switzerland

1980 – 2006

Research Assistant, Department of Molecular Toxicology at German Cancer Research Center (DKFZ), Heidelberg

2006 – 2009

Acting Division Head of Molecular Toxicology at DKFZ, Heidelberg

2009 – 2014

Research Assistant in the Department of Preventive Oncology at DKFZ

Advisory activity

- Ad hoc reviewer of many international scientific journals of toxicology and “drug development and delivery”
- 2006-2014 Contact person at DKFZ for questions in the field of toxicology

Scientific fields of work

- Enzymatic poisoning and detoxification of chemical carcinogens
- Folate metabolism and antifolate in the therapy of cancer and inflammation
- Development of targeted tumor therapeutics and diagnostics by albumin conjugation

Supervision of diploma and doctoral students

- From 1988 to 2016, 15 doctoral students, who were supervised by me, completed their doctorates at various faculties.
- From 1990 to 2005, 8 students completed their diploma/master thesis under my supervision. In addition, 8 trainees completed a research internship in biochemistry/cell biology.

Publications

(This is not a complete list of publications, but only a selection of the major ones.)

M. Hassel, E. Frei, A. J. Streeter, M. Wiessler, Pharmacokinetics of N-nitrodimethylamine and N-nitromethylamine in the rat. *Carcinogenesis*, 11, 357-360, 1990.

M. Weigand, E. Frei, M. Wiessler, Mechanisms of resistance to methotrexate in childhood leukemia. *J. Cancer Res. Clin. Oncol.*, 121, 55, 1995.

E. Frei, F. Gilberg, M. Schröder, A. Breuer, L. Edler, M. Wiessler, Analysis of the inhibition of *N*-nitroso-dimethylamine activation in the liver by *N*-nitro-dimethylamine using a new non-linear statistical method. *Carcinogenesis*, 20, 459-464, 1999.

M. Stiborová, E. Frei, H.H. Schmeiser, Aristolochic acids and renal disease – Chinese herbs nephropathy. *Chem. Listy* 94, 186-189, 2000.

E. Frei, F. Kuchenmeister, R. Gliniorz, A. Breuer, P. Schmezer, *N*-nitrosodimethylamine is activated in microsomes from hepatocytes to reactive metabolites which damage DNA of non-parenchymal cells in rat liver. *Toxicology Letters* 123, 227-234, 2001.

M. Stiborová, E. Frei, B. Sopko, M. Wiessler, H.H. Schmeiser, Carcinogenic aristolochic acids upon activation by DT-diaphorase form adducts found in DNA of patients with Chinese herbs nephropathy. *Carcinogenesis* 23, 617-625, 2002.

M. Weigand, G. Hartung, J. Roboz, S. Sieger, M. Wolf, H. Sinn, H-H. Schrenk, M. Wiessler, E. Frei, Mode of action of methotrexate-albumin in a human T-cell leukemia line and its activity against an MTX-resistant clone. *Anti-Cancer Drug Design* 16, 227-237, 2001.

M. Stiborová, V. Martínek, H. Rýdlová, P. Hodek, E. Frei, Sudan I is a potential carcinogen for humans: evidence for its metabolic activation and detoxication by human recombinant cytochrome P450 1A1 and liver microsomes. *Cancer Research* 62, 5678-5684, 2002.

E. Frei. Albumin conjugated anticancer drugs-a novel concept in tumour therapy. *Science and Culture (India)* 70, 127-130, 2004.

Kim E. Y-L., Gronewold C., Chatterjee A., von der Lieth C-W., Kliem C., Schmauser B., Wiessler M., Frei E. Oligosaccharide mimics containing galactose and fucose specifically label tumour cell surfaces and inhibit cell adhesion to fibronectin. *ChemBioChem* 6, 422-431, 2005.

Wolff, D., Frei, E., Hofmeister, N., Steiner, B., Kleine H-D., Junghans, C., Sievert, K., Terpe, H., Schrenk, H-H., Freund, M., Hartung, G. Methotrexate-albumin and aminopterin-albumin effectively prevent experimental acute graft-versus-host disease. *Transplantation* 82 (4) 527-533, 2006.

Funk D, Schrenk H-H, Frei E. Serum albumin leads to false-positive results in the XTT and the MTT assay. *BioTechniques* 43, 178-182, 2007.

Stiborová M, Dračínská H., Mizerovská J., Frei E., Schmeiser HH., Hudeček J., Hodek P., Phillips DH, Arlt VM. The environmental pollutant and carcinogen 3-nitrobenzanthrone induces cytochrome P450 1A1 and NAD(P)H:quinone oxidoreductase in rat lung and kidney, thereby enhancing its own genotoxicity. [Toxicology](#) 247, 11-22, 2008.

Kremer P., Fardanesh M., Ding R., Pritsch M., Zoubaa S., Frei E. Intra-operative fluorescence staining of malignant brain tumors using 5-aminofluorescein-labeled albumin. *Neurosurgery*, 64/ Operative Neurosurgery 1, 53-61, 2009.

Martínek V., Sklenář J., Dračínský M., Šulc M., Hofbauerová K., Bezouška K., Frei E., Stiborová M. Glycosylation protects proteins against free radicals generated from toxic xenobiotics. *Toxicological Sciences* 117, 359-374, 2010.