

Curriculum Vitae

Personal information **Harald Enzmann**

Work experience

1. Employer: Federal Institute for Drugs and Medical Devices _ Bundesinstitut für Arzneimittel u. Medizinprodukte
 - Start date: 042016
 - End date:
 - Position: Section Head
 - Activities:

Head of Section "European and International Affairs" at the German federal Institute for Drugs and Medical devices (Bundesinstitut für Arzneimittel und Medizinprodukte, BfArM)

 - Country: Germany
2. Employer: Federal Institute for Drugs and Medical Devices _ Bundesinstitut für Arzneimittel u. Medizinprodukte
 - Start date: 092005
 - End date: 032016
 - Position: Division Head
 - Activities:

Head of licensing division 2 at the German Federal Institute for Drugs and Medical device (Bundesinstitut für Arzneimittel und Medizinprodukte, BfArM). The licensing division 2 has currently 98 staff members and is responsible for medicinal products with an indication cancer, immunology, hematology, endocrinology, metabolism, diabetes, gastrointestinal disorders, cardiovascular system and medicinal products for diagnostic use (e.g. contrast media).

 - Country: Germany
3. Employer: Federal Institute for Drugs and Medical Devices _ Bundesinstitut für Arzneimittel u. Medizinprodukte
 - Start date: 122002
 - End date: 092005
 - Position: Division Head
 - Activities: Preclinical Pharmacology and Toxicology: medicines, regulatory, experimental research on carcinogenesis
 - Country: Germany
4. Employer: Bayer HealthCare
 - Start date: 012000
 - End date: 122002
 - Position: Division Head
 - Activities: Head of the Department of Rodent Studies and Genotoxicity: responsible for genotoxicity, carcinogenicity, rodent studies for pharmaceuticals, agrochemicals and chemicals
 - Country: Germany
5. Employer: Bayer HealthCare
 - Start date: 111996
 - End date: 121999
 - Position: Laboratory Head
 - Activities: Research and Development, Toxicology; in vivo and in vitro cancer models
 - Country: Germany
6. Employer: American Health Foundation, Valhalla, New York
 - Start date: 031995
 - End date: 111996
 - Position: Visiting Scientist
 - Activities: Research on various of short term carcinogenicity models, development of the in ovo carcinogenicity assessment
 - Country: United States
7. Employer: Bayer HealthCare
 - Start date: 011989
 - End date: 021995
 - Position: Laboratory Head
 - Activities: Toxicology, short term carcinogenicity testing in vivo (rodents)
 - Country: Germany
8. Employer: Friedrich_Alexander Universität Erlangen_Nürnberg
 - Start date: 121988
 - End date: 121989
 - Position: Postdoctoral Researcher
 - Activities: Research on pathomechanisms of autoimmunity in arthritis
 - Country: Germany
9. Employer: dkfz _ German Cancer Research Center
 - Start date: 011985
 - End date: 121988
 - Position: Postdoctoral Researcher
 - Activities: Research on carcinogenesis, chemically induced, and realted changes in carbohydrate metabolism, rodents, liver, pancreas; research on animal model of osteoporosis
 - Country: Germany

10. Employer: dkfz _ German Cancer Research Center
 - Start date: 011983
 - End date: 011985
 - Position: Graduate Student Researcher
 - Activities: Doctoral thesis; hepatocarcinogenesis, histochemistry, morphometry
 - Country: Germany
11. European Medicines Agency
 - Start date: 102018
 - End date:
 - Position: CHMP Chair
 - Activities: Chair of the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA)
 - Country: Netherlands
12. European Medicines Agency
 - Start date: 112016
 - End date: 092018
 - Position: CHMP Vice_Chair
 - Activities: Vice Chair of the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA)
 - Country: Netherlands
13. European Medicines Agency
 - Start date: 2005
 - End date:
 - Position: CHMP Member
 - Activities: Member of the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) since 2005
 - Country: Netherlands

Education and training

1. Subject: Karl Ruprechts University, Heidelberg
 - Start date: 1979
 - End date: 1985
 - Qualification: Doctor of Medicine (MD), Medizin
 - Organisation:
 - Country: Germany
2. Subject: New York Medical College, NY, USA
 - Start date: 1995
 - End date: 1996
 - Qualification: Master of Science Degree, Experimental Pathology
 - Organisation:
 - Country: United States

Additional information

Publications

2018 Blake K., Bonelli M., Ponzano S., Enzmann H.: Response to: "The Role of Quantitative Systems Pharmacology in the Design of First_in_Human Trials". *Clinical Pharmacology & Therapeutics* 10 (2018).1002/cpt.1148. Schnorr J., Fütterer S., Spicher K., Catarinolo M., Schlösser C., Enzmann H, Langguth P.: Bioequivalence decision for nanoparticulate iron complex drugs for parenteral administration based on their disposition. *Regulatory Toxicology and Pharmacology* 94 (2018), 293_298. Ponzano S., Blake K., Bonelli M., Enzmann H.: Promoting Safe Early Clinical Research of Novel Drug Candidates: A European Union Regulatory Perspective. *Clin Pharmacol Ther.* Apr;103(4) (2018):564_566. doi: 10.1002/cpt.899. Epub 2017 Nov 6. 2017 Kaestner, B., Spicher, K., Jaehde, U., Enzmann, H.: Effects of sorafenib and cisplatin on preneoplastic foci of altered hepatocytes in fetal turkey liver. *Toxicol. Res.* 6 (2017) 54_62. de Bekker-Grob, E.W., Berlin, C., Levitan, B. et al.: Giving Patients' Preferences a Voice in Medical Treatment Life Cycle: The PREFER Public-Private Project. *Patient* 10 (2017), 263. doi:10.1007/s40271_017_0222_3 2016 Enzmann, H., Meyer, R., Broich, K. The new EU regulation on in vitro diagnostics: potential issues at the interface of medicines and companion diagnostics" *Biomarkers in Medicine* (in press) Enzmann, H., Norta, M. Development of Innovative Medicines for European Patients and Impact of Brexit *Pharmaceut Reg Affairs* 5: 171. doi:10.4172/2167_7689.1000171 August 12, 2016 Enzmann, H.: New trends and challenges in the European regulation of innovative medicines, *Regul Toxicol Pharmacol.* 2016 May 27. pii: S0273_2300(16)30147_7. doi: 10.1016/j.yrtph.2016.05.033. [Epub ahead of print] Bergmann, L., Enzmann, H., Thirstrup, S., Schweim, J.K., Widera, I., Zwierzina, H.: Access to innovative oncology medicines in Europe *Ann Oncol* 27 (2016) 353–356 2015 Spicher, K., Brendler-Schwaab, S., Schlösser, C., Catarinolo, M., Fütterer, S., Langguth, P., Enzmann H.: Differences in tissue distribution of iron from various clinically used intravenous iron complexes in fetal avian heart and liver. *Regulatory Toxicology and Pharmacology* 73 (2015) 65–72. Pfeifer, V., Metzger, A., Norta, M., Enzmann, H., Eckstein, N.: Hilfe bei seltenen Krankheiten. *Deutsche Apotheker Zeitung* 38 (2015) 158_64. Pfeifer, V., Metzger, A., Norta, M., Enzmann, H., Eckstein, N.: Ähnlich, gleich oder klinisch überlegen? *Deutsche Apotheker Zeitung* 38 (2015) 66_72. 2014 Cortes-Blanco, A., Prieto-Yerro, C., Martinez-Lazaro, R., Zamora, J., Jiménez-Huete, A., Haberkamp, M., Pohly, J., Enzmann, H., Zinserling, J., Strassmann, V., Broich, K.: Florbetapir ((18)F) for brain amyloid positron emission tomography: Highlights on the European marketing approval. *Alzheimers Dement.* (2014) S395_S399. Eckstein N., Röper L., Haas B., Potthast H., Hermes U., Unkrig C., Naumann-Winter F., Enzmann H.: Clinical pharmacology of tyrosine kinase inhibitors becoming generic drugs: the regulatory perspective. *J Exp Clin Cancer Res.* 33 (2014) 15. Williams, G., Iatropoulos, M., Enzmann, H., Deschl, U.: Principles of Clinical Pathology for Toxicology Studies. *Hayes' Principles and Methods of Toxicology*, Sixth Edition, Edited by A. Wallace Hayes and Claire L. Kruger, CRC Press (2014) 1251_1304. Hanaizi Z., Unkrig C., Enzmann H., Camarero J., Sancho-Lopez A., Salmonson T., Gisselbrecht C., Laane E., Pignatti F.: The European Medicines Agency Review of Bosutinib for the Treatment of Adult Patients With Chronic Myelogenous Leukemia: Summary of the Scientific Assessment of the Committee for Medicinal Products for Human Use. *Oncologist.* 19 (2014) 421_425. doi: 10.1634/theoncologist.2013_0294. Epub 2014 Mar 25. Bartsch, R., Frings, S., Marty, M., Awada, A., Berghoff, A.S., Conte, P., Dickinson, S., Enzmann, H., Gnant, M., Hasmann, M., Hendriks, H.R., Llombart, A., Massaccesi, C., von Minckwitz, G., Penault-Llorca, F., Scaltriti, M., Yarden, Y., Zwierzina, H., Zielinski, C.C.: Present and future breast cancer management _ bench to bedside and back: a positioning paper of academia, regulatory authorities and pharmaceutical industry. *Ann Oncol* 25 (2014) 773_780. Bergmann, L., Enzmann, H., Broich, K., Hebborn, A., Marsoni, S., Goh, L., Smyth J. F., Zwierzina, H.: Actual developments in European regulatory and health technology assessment of new cancer drugs: what does this mean for oncology in Europe? *Ann Oncol* 25 (2014) 303_306. Enzmann HG., Brunnemann KD., Kästner B., Iatropoulos MJ., Williams GM.: Dose_dependent induction of preneoplastic lesions by the tobacco-specific nitrosamine carcinogen NNK in the in ovo carcinogenicity assessment (IOCA) assay. *Exp Toxicol Pathol* 66 (2014) 35_40. Tzogani K., Straube M., Hoppe U., Kiely P., O'Dea G., Enzmann H., Salmon P., Salmonson T., Pignatti F.: The European Medicines Agency approval of 5_aminolevulinic acid (Ameluz) for the treatment of actinic keratosis of mild to moderate intensity on the face and scalp: Summary of the scientific assessment of the Committee for Medicinal Products for Human Use. *J Dermatolog Treat* 25 (2014) 371_374. 2013 Enzmann H, Broich K.: Cancer: Is it really so different? Particularities of oncologic drugs from the perspective of the pharmaceutical regulatory agency. *Z Evid Fortbild Qual Gesundhwes.* 107 (2013) 120_128. Berntgen, M., Enzmann, H., Schabel, E., Prieto Yerro, C., Gómez-Outes, A., Salmonson, T., Musaus, J.: Linacotide for treatment of irritable bowel syndrome—The view of European regulators. *Digestive and Liver Disease, Volume 45* (2013) 724_726. Enzmann H., Brunnemann K., Iatropoulos M., Shpyleva S., Lukyanova N., Todor I., Moore M.,

Spicher K., Chekhun V., Tsuda H., Williams G.: Inter_laboratory comparison of turkey in ovo carcinogenicity assessment (IOCA) of hepatocarcinogens. *Experimental and Toxicologic Pathology* 65 (2013) 729_735. Enzmänn H, Broich K.: Therapie der Folgekrankheiten kindlicher Adipositas. *Treatment of sequelae of childhood obesity. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 56 (2013) 485_486. 2012 Mayer, P., Reitzenstein, U., Warnken, M., Enzmänn, H., Racké, K. Insulin action on H292 bronchial carcinoma cells as compared to normal bronchial epithelial cells. *Pulm Pharmacol Ther* 25 (2012) 104_114. Enzmänn, H., Kaestner, B., Todorova, L., Kamusheva, M., Vlaskovska, M., Petrova, G.: Current Issues in Orphan Drug Regulation in the EU. *Hayka Farmakologia / Наука Фармакология* 2 (2012) 8_16. 2011 Enzmänn, H., Broich, K.: Die Therapie von Adipositas bei Kindern und Jugendlichen: Ein ungenügend bestelltes Feld? The therapy of obesity in children and adolescents : An insufficiently researched area? *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 54 (2011) 525_526. Williams, GM., Brunnemann, KD., Iatropoulos, M.J., Smart, DJ., Enzmänn, HG.: Production of liver preneoplasia and gallbladder agenesis in turkey fetuses administered diethylnitrosamine. *Archives of Toxicology* 85 (2011) 681_687. Enzmänn, H., Weise, M.: Current european regulatory perspectives on insulin analogues. *Diabetology & Metabolic Syndrome* 3 (2011) 14. Kästner, B., Wagner, C., Spicher, K., Jaehde, U., Enzmänn, H.: Study on the Modulation of Cancer Prestages and Host Tissue in Embryonic Avian Liver by Sorafenib; internationale Konferenz "Cell Cycle Regulators: Inhibitors and Cancer", Februar 2011, Wien, Poster Mayer P., Haas B., Celnér J., Enzmänn H., Pfeifer A.: Glitazone-like action of glimepiride and glibenclamide in primary human adipocytes. *Diabetes Obes Metab.* 13 (2011) 791_799. Enzmänn, H., Weise, M.: Regulatory perspectives on innovative insulin analogues. *Hayka Farmakologia / Наука Фармакология* 2 (2011) 11_15. 2010 Warnken M., Reitzenstein U., Sommer A., Fuhrmann M., Mayer P., Enzmänn H., Juergens UR., Racké K.: Characterization of proliferative effects of insulin, insulin analogues and insulin-like growth factor_1 (IGF_1) in human lung fibroblasts. *Naunyn-Schmied Arch Pharmacol* 382 (2010) 511_524. Wagner C., Kästner B., Spicher K., Mayer P., Jaehde U., Enzmänn, H.: Potential Targets for Anticancer_Therapy show different Gene Expression Patterns in HepG2 Cells grown in Culture compared to the same Tumor Cell Line grown as Nodular Tumor. international conference "Tumor and Host: Novel Aspects of old Problem", 2010, Kiev, Poster; Abstract published in: *Experimental Oncology* 32 (2010) 1_108. S3.25. Spicher, K., Kästner, B., Wagner, C., Enzmänn, H.: Chemical Induction of Tumors and Tumor Prestages in Embryonic Avian Liver. S4.27 *Experimental Oncology* 32 (2010) 1_108. Kästner, B., Wagner, C., Spicher, K., Jaehde, U., Enzmänn, H.: Effect of Anti_Tumor Drugs on Foci of Altered Hepatocytes and Surrounding Host Tissue in Embryonic Turkey Liver; international conference "Tumor and Host: Novel Aspects of old Problem", 2010, Kiev, Vortrag; Abstract published in: *Experimental Oncology* 32 (2010) 1_108: S5.6. 2009 McCabe, C., Bergmann, L., Bosanquet, N., Ellis, K.M., Enzmänn, H., von Euler, M., Jönsson, B., Kallen, K.J., Newling, D., Nüssler, V., Paschen, B., de Wilde, R., Wilking, N., Teale, C., Zwierzina, H.: Biotherapy Development Association: Market and Patient Access to New Oncology Products in Europe: A Current, Multidisciplinary Perspective. *Annals of Oncology* 20 (2009) 403_412. Shukla, A., Grisouard, J., Ehemann, V., Hermanni, A., Mayer, D., Enzmänn H.: Analysis of Signaling Pathways Related to Cell Proliferation Stimulated by Insulin Analogs in Human Mammary Epithelial Cell Lines. *Endocrine-Related Cancer* 16 (2009) 429_441. Shuklan A., Enzmänn, H., Mayer, D.: Proliferative effect of Apidra® (insulin glulisine), a rapid_acting insulin analogue on mammary epithelial cells. *Archives of Physiology and Biochemistry*, 115 (2009) 119_126. Sudhop, T., Enzmänn, H., Klar, R.: Klinische Forschung Auswirkungen der europäischen Gesetzgebung und aktuelle Entwicklungen. *Bundesgesundheitsbl* 52 (2009) 375_376. 2008 Mayer, D., Shukla, A., Enzmänn, H.: Proliferative effects of insulin analogues on mammary epithelial cells. *Archives of Physiology and Biochemistry*, 114 (2008): 38_44. Roth, S., Langguth, P., Spicher, K., Enzmänn, H.: Comparative toxicity and cell_tissue distribution study on nanoparticulate iron complexes using avian embryos and HepG2_cells. *Translational Research* 151 (2008) 36_44. Luetz, J., Enzmänn, H.: European Incentives for Orphan Medicinal Products. *Bundesgesundheitsbl Gesundheitsforsch Gesundheitsschutz*, 51 (2008) 500_508. Schneider C., Enzmänn, H.: The role of the Committee for Medicinal Products for Human Use (CHMP) in the European centralised procedure. *Bundesgesundheitsbl _ Gesundheitsforsch -Gesundheitsschutz*, 51 (2008) 731_739. Seitz, R., Enzmänn, H.: Arzneimittelzulassung: Europäische Zusammenarbeit ohne Alternative. *Bundesgesundheitsbl _ Gesundheitsforsch -Gesundheitsschutz*, 51 (2008) 703. 2007 Williams, G., Iatropoulos, M., Enzmänn, H.: Principles of Testing for Carcinogenic Activity, Principles and Methods of Toxicology, Fifth Edition, Edited by A. Wallace Hayes CRC Press/Taylor and Francis Group, FL (2007) 1265_1316. 2005 Kopplow, K, Wayss K., Enzmänn H., Mayer D.: Dehydroepiandrosterone causes hyperplasia and impairs regeneration in rat liver. *International Journal of Oncology* 27 (2005) 1551_1558. 2004 Perrone, C., Ahr, H., Duan, J., Jeffrey, A., Schmidt, U., Williams, G., Enzmänn, H.: Embryonic turkey liver: activities of biotransformation enzymes and activation of DANN_reactive carcinogens. *Archives of Toxicology* 78 (2004) 589_598. 2003 Ittrich, C., Deml, E., Oesterle, D., Uttler, K., Mellert, W., Brendler_Schwaab, S., Enzmänn, H., Schladt, L., Bannasch, P., Haertel, T., Onnikes, O., Schwarz, M., Kopp_Schneider, A.: Prevalidation of a Rat Liver Foci Bioassay (RLFB) Based on Results from 1600 Rats: A Study Report, *Toxicologic Pathology* 31 (2003), 60_79. 2002 Brunnemann, K.D., Enzmänn, H.G., Perrone, C.E., Iatropoulos, M.J., Williams, G.M.: In ovo carcinogenicity assay (IOCA): evaluation of mannitol, caprolactam and nitrosoproline. *Archives of Toxicology* 76 (2002) 606_612. 2001 Iatropoulos M.J., Jeffrey A.M., Schlüter G., Enzmänn H.G., Williams G.M.: Bioassay of mannitoland caprolactam and assessment of response to diethylnitrosamine in heterozygous p53_deficient (+/-) and wild type (+/+) mice. *Arch Toxicol* 75, (2001) 52_58. Korr H., Botzem B., Schmitz C., Enzmänn H.: N_Nitrosomorpholine induced alterations of unscheduled DNA synthesis, mitochondrial DNA synthesis and cell proliferation in different cell types of liver, kidney, and urogenital organs in the rat. *Chemico-Biological Interactions* 134, (2001) 217_233. Iatropoulos M.J., Jeffrey A.M., Enzmänn, H.G., Von Keutz, E., Schlüter, G., Williams, G.M.: Assessment of chronic toxicity and carcinogenicity in an accelerated cancer bioassay in rats of moxifloxacin, a quinolone antibiotic. *Experimental and Toxicologic Pathology* 53 (2001) 345_347. 1999 Williams, G.M., Enzmänn, H.: The rat liver hepatocellular altered focus limited bioassay for chemicals with carcinogenic activity. *Carcinogenicity: Testing, Predicting and Interpreting Chemical Effects*. K. T. Kitchin (Ed.), Marcel Dekker, Inc., New York, Basel, 1999, pp 361_394. Enzmänn, H., Wiemann, C., Ahr, H.J., Schlueter, G.: Damage to mitochondrial DNA induced by the quinolone Bay y 3118 in embryonic turkey liver. *Mutation Research* 425, (1999) 213_224. Wiemann, C., Enzmänn, H., Löser, E., Schlüter, G.: Nonlinearity of Nuclear Enlargement in Hepatocytes Induced by the Carcinogen N'_Nitrosomorpholine in Ovo. *Cancer Detection and Prevention* 23, (1999) 485_495. 1998 Ahr, H.J., Bomhard, E., Enzmänn, H., Karbe, E., Sander, E., Schlüter, G.: Calcium channel blockers and the risk of cancer: a preclinical assessment. *Cardiovascular Drugs and Therapy* 12 (1998) 157_169. Witt, A., Ahr, H.-J., Brendler_Schwaab, S., Enzmänn, H., Steinke, W.: Carcinogen_induced mitochondrial DNA damage in the in ovo model. *Toxicology in vitro* 12 (1998) 329_333. Enzmänn, H., Bomhard, E., Iatropoulos, M., Ahr, H.J., Schlueter, G., Williams, G.M.: Short_ and Intermediate_term Carcinogenicity Testing _ A Review. Part 1: The Prototypes Mouse Skin Tumor Assay and Rat Liver Focus Assay. *Food and Chemical Toxicology* 36, (1998) 979_995. Enzmänn, H., Iatropoulos, M., Brunnemann, K.D., Bomhard, E., Ahr, H.J., Schlueter, G., Williams, G.M.: Short_ and Intermediate_term Carcinogenicity Testing _ A Review. Part 2: Available Experimental Models. *Food and Chemical Toxicology* 36, (1998) 997_1013. 1997 Carmichael, M., Enzmänn, H., Pate, I., Wächter, F.: The significance of mouse liver tumor formation for carcinogenic risk assessment: results and conclusions from a survey of ten years of testing by the agrochemical industry. *J. Toxicol. Environm. Health* 105 (1997) 1196_1203. Enzmänn, H., Brunnemann, K.D.: The in ovo carcinogenicity assay (IOCA): a review of an experimental approach for research on carcinogenesis and carcinogenicity testing. *Frontiers in Bioscience* 2, (1997) 30_39. 1996 Witt, A., Kühlem, C., Enzmänn H.: Das in ovo Modell der Karzinogenese. *Der Tierschutzbeauftragte* 5 (1996) 139_142. 1995 Enzmänn, H., Kühlem, C., Kaliner, G., Löser, E., Bannasch, P.: Rapid induction of preneoplastic liver foci in embryonal turkey liver by diethylnitrosamine. *Toxicologic Pathology* 23 (1995) 560_569. Enzmänn, H., Kühlem, C., Löser, E., Bannasch, P.: Damage to mitochondrial DNA induced by the hepatocarcinogen diethylnitrosamin in ovo. *Mutation Res.* 329 (1995) 113_120. Enzmänn, H., Kühlem, C., Löser, E., Bannasch, P.: Dose dependence of diethylnitrosamin_induced nuclear enlargement in embryonal turkey liver. *Carcinogenesis* 16 (1995) 1351_1355. Enzmänn, H., Zerber, H., Kopp_Schneider, A., Löser, E., Bannasch, P.: Effects of low doses of N_nitrosomorpholine on the development of early stages of hepatocarcinogenesis. *Carcinogenesis* 16 (1995) 1513_1518. Wirtzner, U., Enzmänn, H., Rosenbruch, M., Bomhard, E.: Accumulation of p53 protein in chemically induced oval cells during early stages of rodent hepatocarcinogenesis. *Carcinogenesis* 16 (1995) 697_701. 1992 Enzmänn, H., Kaliner, G., Watta_Gebert, B. and Löser, E.: Foci of altered hepatocytes induced in embryonal turkey liver. *Carcinogenesis* 13 (1992) 943_946. Enzmänn, H., Zerber, H., Löser, E. and Bannasch, P.: Glycogen phosphorylase hyperactive foci of altered hepatocytes in aged rats. *Virchows Arch.* B 62 (1992) 3_8. 1990 Enzmänn, H., Dettler, T., Ohlhauser, D., Stumpf, P. and Bannasch, P.: Dietary fructose enhances the development of atypical acinar cell nodules in the pancreas of rats pretreated with N_nitrosomorpholine. *Arch. Geschwulstf.* 4 (1990) 283_287. Enzmänn, H., Mollenhauer, J. and Brune, K.: Humoral

autoimmunity to cartilage in rheumatoid arthritis? Agents and Actions 29 (1990) 114_116. 1989 Bannasch, P., Enzmann, H., Hacker, H.J., Weber, E., Zerban, H.: Comparative pathobiology of hepatic preneoplasia. In: Liver Cell Carcinoma, P. Bannasch, D. Keppler and G. Weber (eds.), MTP Press, Lancaster 1989, pp. 55_76. Bannasch, P., Enzmann, H., Klimek, F., Weber, E. and Zerban, H.: Significance of sequential cellular changes inside and outside foci of altered hepatocytes during hepatocarcinogenesis. Toxicol. Pathol. 17 (1989) 617_629. Enzmann, H., Ohlhauser, D., Dettler, T., Bannasch, P.: Enhancement of hepatocarcinogenesis in rats by dietary fructose. Carcinogenesis 10 (1989) 1247_1252. Enzmann, H., Ohlhauser, D., Dettler, T., Benner, U., Hacker, H.J., Bannasch, P.: Unusual histochemical pattern in preneoplastic hepatic foci characterized by hyperactivity of several enzymes. Virchows Arch. B 57 (1989) 99_108. Mollenhauer, J., Enzmann, H. and Brune, K.: Antibodies against chondrocyte cell surface proteins in rheumatic diseases. BIRAs Newsletter 4 (1989) 9_12. 1988 Bannasch, P., Enzmann, H., Ruan, Y., Weber, E., Zerban, H.: Cellular differentiation during neoplastic development in the liver. In: Experimental Hepatocarcinogenesis, M. Roberfroid and V. Pr,at (eds.), Plenum Press 1988, New York, London, pp. 89_103. Enzmann, H., Bannasch, P.: Non_persisting early foci of altered hepatocytes induced in rats by N_nitrosomorpholine. J. Cancer Res. Clin. Oncol. 114 (1988) 30_34. Enzmann, H., Dettler, T., Ohlhauser, D., Bannasch, P.: Elevation of glucose_6_phosphate in early stages of hepatocarcinogenesis induced in rats by N_nitrosomorpholine. Hormone Metab. Res. 20 (1988) 128_129. 1987 Bannasch, P., Enzmann, H., Zerban, H.: Preneoplastic lesions as indicators of the carcinogenic risk caused by chemicals. In: Cancer Risks, Strategies for Elimination, P. Bannasch (ed.), Springer_Verlag, Berlin, Heidelberg, New York, London, Paris, Tokyo 1987, pp. 47_64. Enzmann, H., Bannasch, P.: Morphometric study of alterations of extrafocal hepatocytes of rat liver treated with N_nitrosomorpholine. Virchows Archiv B 53 (1987) 218_226. Enzmann, H., Bannasch, P.: Potential significance of phenotypic heterogeneity of focal lesions at different stages in hepatocarcinogenesis. Carcinogenesis 8 (1987) 1607_1612. Enzmann, H., Edler, L., Bannasch, P.: Simple elementary method for the quantification of focal liver lesions induced by carcinogens. Carcinogenesis 8 (1987) 231_235. 1985 Bannasch, P., Benner, U., Enzmann, H., Hacker, H.J.: Tigroid cell foci and neoplastic nodules in the liver of rats treated with a single dose of aflatoxin B1. Carcinogenesis 6 (1985) 1641_1648. Bannasch, P., Moore, M.A., Hacker, H.J., Klimek, F., Mayer, D., Enzmann, H., Zerban, H.: Potential significance of phenotypic instability in focal and nodular liver lesions induced by hepatocarcinogens. In: Hepatology: A Festschrift for Hans Popper. Hrsg.: H. Brunner u.a., New York, Raven Press 1985, pp. 191_209.

Projects

Memberships

EACR European Association for Cancer Research
IATP International Academy of Toxicologic Pathology
SOT Society of Toxicology
ESTP European Society of Toxicologic Pathology
Science Pharmacology (editorial board)

Other Relevant Information