Inge Schuster PhD

1190 Vienna
Neustift am Walde 10
Phone 0043-1-4403031
Fax 0043 1 44040 38
E-mail inge@tbi.univie,ac.at

Curriculum vitae

Personal Information

Date of Birth: 25.6.1941

Place of Birth: Vienna

Nationality: Austrian

Marital status: since 1967 married to Peter Schuster Ph.D., em. Univ.Prof.

Children: DI.Dr.Manfred Schuster, born 1972

Education

1947 – 1959 Elementary school, secondary/high school, Vienna

1959 - 1964 University Vienna, study of Chemistry (Physics)

1964 - 1966 University Vienna, Institute of Physical Chemistry (E.Broda):
Thesis "Studies on the binding of zinc by cell components of the algae chlorella pyrenoidosa"

July 1967: Graduation Ph.D.

Work experience

1966 – 1967 NMR operator at the Institute of Organic Chemistry, Vienna (F.Wessely):

1968 - 1969 Postdoctoral fellow at the Max-Planck Institute of Biophysical Chemistry, Göttingen (M.Eigen, K.Kirschner):
"Regulation of allosteric enzymes, investigated by rapid reaction techniques"

1970 - 1999 Sandoz (Novartis) Research Institute, Vienna :
Head of laboratory, Program Head, International Project Representative
Search for new targets in chemotherapy (1970 – 1990) and dermatology (1991 – 1998), selection and profiling of lead compounds and contributions to development of preclinical and clinical products. Major areas (in chronological order):

- Cytochrome P-450: mechanisms of catalysis, induction, selective inhibition, specific forms in human liver
- *In vitro/in vivo* models to study drug metabolism and to predict the fate of drugs in man *(applied in different projects on e.g antibacterials, antifungals, antivirals, immunosuppressives…)*
- *In vitro/in vivo* models to study drug toxicity (*used e.g. in antifungal programs on lamisil*^{R} *and several azoles)*
- *In vitro/in vivo* models to study drug uptake/absorption, binding/ distribution, release/elimination *(used e.g. to define criteria for oral absorption of β-lactams, to increase availability of allylamines (antifungals))*
- Steroid hormones: synthesis and metabolism; screening for selective inhibitors of aromatase, CYP17, CYP11(*Spin-off projects from antifungal program; lead compounds defined and profiled)*
- Human keratinocytes and dermal fibroblasts as models to define novel targets for therapy in dermatology and to profile compounds. *(Several projects; e.g. on inhibitors of vitamin D-hydroxylases: VID400 finished preclinical phase)*

1999 retired

1999 - free coworker at the Institute for Theoretical Biochemistry, Univ. Vienna

2000 - 2005 free coworker at the Institute for Pharmaceutical Chemistry, Univ. Vienna

2005 - lecturer at the FH-Vienna ("Bioengeneering")

1999 - international cooperations (Brown Univ. Providence, RI,USA;
Institut für Biochemie Universität Saarbrücken

2011 - scientific coordination of : www.scienceblog.at

Organizer of Conferences

1988 "6th International Conference on Biochemistry and Biophysics of Cytochrome P-450" in Vienna, University of Economics ("*Proceedings of the 6th International Conference on Biochemistry and Biophysics of Cytochrome P-450*" 1989, Taylor&Francis London, ed. I.Schuster).

1997 " International Conference on the Vitamin D-Cascade" in Vienna, NFI.

References since retirement:

1. N Astecker, GS Reddy, G Herzig, G Vorisek, I Schuster *1α25-Dihydroxy-3-epivitamin D3 a physiological metabolite of 1α25-dihydroxyvitamin D3: its production and metabolism in primary human keratinocytes.* Mol.Cell.Endocrinol. (2000) 170:91-101
2. I Schuster, H.Egger, D.Bikle, G.Herzig, GS Reddy, A.Stuetz, P.Stuetz, G.Vorisek *Selective inhibition of vitamin D hydroxylases in human keratinocytes*. Steroids (2001) 66:409-22
3. I.Schuster, H.Egger, N.Astecker, G.Herzig, M.Schüssler, G.Vorisek. *Selective inhibitors of CYP24: mechanistic tools to explore vitamin D metabolism in human keratinocytes.* Steroids (2001) 66:451-62
4. M.Schüssler, N.Astecker, G.Herzig, G.Vorisek, I.Schuster. *Skin is an autonomous organ in synthesis, two-step activation and degradation of vitamin D3: CYP27 in epidermis completes the set of essential vitamin D hydroxylases.* Steroids (2001) 66:399-408.
5. I.Schuster, H.Egger, P.Nussbaumer, R.T.Kroemer *Inhibitors of vitamin D hydroxylases: Structure-activity relationships.* J.Cell.Biochem. (2003) 88 (2): 372-380
6. J.Elias, B.Marian, C.Edling, B.Lachmann, CR Noe, R.Schulte-Hermann, I.Schuster. *Induction of Apoptosis by Vitamin D Metabolites in a Glioma Cell Line* in Recent Results in Cancer Research (2003), 164: 319-332
7. I.Schuster, H.Egger, G.Herzig, G.S.Reddy, G.Vorisek *Combination of Vitamin D Metabolites with Selective Inhibitors of Vitamin D Metabolism* in Recent Results in Cancer Research (2003) 164:169-88
8. N.Astecker, E.A.Bobrovnikova, J.L.Omdahl, L.Gennaro, P.Vouros, I.Schuster, MR.Uskokovic, S.Ishizuka, G.C.Wang, G.S.Reddy *C-25 hydroxylation of 1 alpha,24(R)-dihydroxyvitamin D-3 is catalyzed by 25-hydroxyvitamin D-3-24-hydroxylase (CYP24A1): metabolism studies with human keratinocytes and rat recombinant CYP24A1* Arch.Biochem.Biophys. (2004) 431 (2): 261-270
9. I.Schuster, N.Astecker, H.Egger, G. Herzig, G.S.Reddy, M.Schuessler, G.Vorisek, Ch.Wachter. *Inhibitors of Vitamin D Hydroxylases: Mechanistic Tools and Therapeutic Aspects* in New Topics in Vitamin D Research (2006, Nova Science Publishers ISBN 1-60021-001-5 Ed. V.D. Stolzt) pp. 67 -144
10. I.Schuster, H.Egger, G.Herzig, G.S.Reddy, J.A.Schmid, M.Schuessler, G.Vorisek, *Selective inhibitors of vitamin D metabolism - New concepts and perspectives.* Anticancer Res. (2006) 26 (4A): 2653-2668.
11. I.Schuster, R.Bernhardt *Inhibition of cytochromes P450: Existing and new promising therapeutic targets* Drug Metabolism Rev. (2007) 39 (2-3): 481-499
12. G. Lepesheva, R.D.Ott, T.Y. Hargrove, Y.Y. Kleshchenko, I.Schuster, W.D.Nes, G.C.Hill, F.Villalta, M.R.Waterman. *Sterol 14 alpha-demethylase as a potential target for antitrypanosomal therapy: Enzyme inhibition and parasite cell growth* Chemistry&Biology (2007) 14 (11): 1283-1293

13. A. Berwanger, S. Eyrisch, I. Schuster, V. Helms, R.Bernhardt. *Polyamines: Naturally occurring small molecule modulators of electrostatic protein-protein interactions* J.Inorg.Chem (2010) 104 (2): 118-125

14. I Schuster, R Bernhardt. *Interactions of natural polyamines with mammalian proteins.* BioMol Concepts (2011) 2: 79-94

15. I Schuster. *Cytochromes P450 are essential players in the vitamin D signaling system* Biochim Biophys Acta (2011) *181*: *186-199*

16. F.Molnar, R Sigueiro, Y Sato, C Araujo, I Schuster, P Antony, J Peluso, C Muller, A Mourino, D. Moras, N. Rochel. *1a,25(OH)2-3-epi-vitamin D3, a natural physiological metabolite of vitamin D3: Its synthesis, biological activity and crystal structure with its receptor.* PLOS ONE (2011) 2011-05-28, 6(3) e18124

17. SY Rhieu, AJ Annalora, RM Gathungu, P Vouros, MR Uskokovic, I Schuster, GTR Palmore, GS Reddy. *A new insight into the role of rat cytochrome P450 24A1 in metabolism of selective analogs of 1 alpha,25-dihydroxyvitamin D-3* ABB (2011) 509 (1) 33-43

- At SFI (NFI): Internal reports, project proposals, program documentations, phase transition documents, documents for submission to authorities
- Selected Patents
  - I.Schuster, M.Marko, H.Egger, M.Grassberger, A.Stuetz *Inhibierung der Cyt P-450 abhängigen Synthese von Steroidhormonen durch Acylaminoderivate* Case 900-9438 (Priority 26.10.85), Case 900-9545 (Priority 7.10.88; BRD), Case 900-9546 (Priority 19.11.88; BRD); Case 900-9586 (Priority 1.7.89; BRD)
  - I.Schuster, H.Egger *Acylated aminoalkanimidazoles and –triazoles*, Case 900-9807/CIP (priority 18.5.94), filed in/for 43 countries; US 08/779,759 7 January 1997
  - H.Egger, I.Schuster Azolsulfonamide als selective Vitamin D3Hydroxylasehemmer Case 900-9836 (priority 17.3.95; UK), Case 900-9867 (priority 22.4.96; UK), Case 900-9881 (priority 6.3.97)
