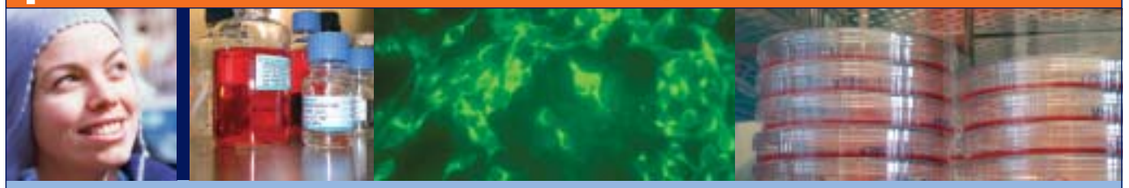
"Professor Doehmer is one of the first toxicologists to apply the use of mammalian cell lines expressing human recombinant P450-isoenzymes in the prediction of drug metabolism und toxicity. This success has led to the confirmation of the heterogeneity of drug metabolism in different species and is an alternative to animal models for the evaluation of toxicity."

Taken from the DFG expert report (August 30, 2000)

V79 Cell Battery™

4

4 V79 Cell Battery™



Our Business
ADME in vitro / in vivo
Toxicology in vitro / in vivo
V79 Cell Battery™
Analytical Services
Service Packages
Partnered Services

4. V79 Cell Battery™

GenPharmTox BioTech AG offers many of its contract services using the unique V79 Cell Battery™.
The V79 Cell Battery™ consists of a panel of recombinant V79 cell lines expressing a broad range of phase I and / or phase II enzymes relevant in the metabolism of xenobiotics.
GenPharmTox BioTech AG also provides cell homogenate and subcellular fractions of these recombinant V79 cell lines.

V79 cells provide unique biological properties:

- stable diploide karyotype
- cloning efficiency >90%
- doubling time <12 h
- stable morphology, robust culture
- no CYP background activity
- proven in toxicology since the 1960's
- recommended by the OECD guidelines

These properties make the V79 Cell Battery™ an unique *in vitro* test system:

- **Humanized**: Humanized systems guarantee high predicitivity of *in vitro* results for the human situation.
- **Integrated**: Integrated system with identical location of metabolism and toxicological endpoint.
- **Specific**: Specificity enables to clarify metabolic pathways as well as mechanisms in toxicology.
- **Standardized**: Standardized systems guarantee high reproducibility.
- **Easy to use**: Stable and reproducible homogenous systems.
- **Economic**: Excellent cost / benefit ratio due to improved data quality with high predictive value for the human situation.

"A number of developments, including the construction of genetically engineered cell lines expressing specific activating enzymes, may provide the potential for endogenous activation. The choice of the cell lines used should be scientifically justified (e.g. by the relevance of the cytochrome P450 isoenzymes for the metabolism of the test substance)."
OECD recommendations

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4.1. V79 Cell Battery™ for Phase I Enzymes

Human CYP:

Liver

- hCYP 1A2
- hCYP 2A6
- hCYP 2B6
- hCYP 2C8
- hCYP 2C9
- hCYP 2D6
- hCYP 2E1
- hCYP 3A4
- hCYP 3A5

Lung

- hCYP 1A1
- hCYP 1A2
- hCYP 2E1
- hCYP 2F1
- hCYP 3A4
- hCYP 4B1

Adrenal Gland

- hCYP 11B1
- hCYP 11B2

Polymorphic Variants

- hCYP 2C9*1 (wt), *2, *3
- hCYP*2D6*1 (wt), *2, *9, *10, *17

Rat CYP:

- rCYP 1A1
- rCYP 1A2
- rCYP 1B1
- rCYP 2B1
- rCYP 2E1

Fish CYP:

- fCYP 1A1

Mouse CYP:

- mCYP 1A1
- mCYP 1B1

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4.2. V79 Cell Battery™ for Phase II Enzymes

4.2.1. Glutathion S-Transferases (GST)

Human GST:

- hGST A1
- hGST A2
- hGST M1a
- hGST P1
- hGST T1
- hGST T2

Combinations of Human CYP and Human GST

- h1A1 + hGST M1a
- h1A1 + hGST P1

Murine GST

- mGST M1
- mGST A4

Rat GST

- rGST 55

Combinations of Rat CYP and Human or Murine GST

- rCYP 1A1 + hGST P1
- rCYP 1A1 + hGST M1a
- rCYP 2B1 + mGST Yc2
- rCYP 2B1 + mGST Ya1
- rCYP 1A1 + mGST P1
- hGST T2

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4.2.2. N-Acetyl-Transferases (NAT)

Human NAT2

- hNAT2*4 (wt)
- hNAT2*5B
- hNAT2*6A
- hNAT2*13

Combinations of Human CYP and Human NAT2

- hCYP1A2 + hNAT2*4 (wt)
- hCYP1A2 + hNAT2*5B
- hCYP1A2 + hNAT2*6A
- hCYP1A2 + hNAT2*13

4.2.3. UDP-Glucuronosyl-Transferases (UGT)

Please contact us for details.

4.2.4. Sulfo-Transferases (SULT)

Please contact us for details.

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