

# CURRICULUM VITAE

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## **Matthias Grill**

Born June 28<sup>th</sup>, 1978 in Munich

## **Professional Experience**

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**Since 03/2021**

### **Founder / Managing Director**

MiHKAL GmbH, Allschwil (Switzerland)

Foundation of MiHKAL GmbH (contract synthesis and contract research)  
officially licensed for handling of narcotics/drugs

**Since 10/2020**

### **Qualified Person**

Pharmaserv AG, Stansstad (Switzerland)

- Documentation of API handling procedures in compliance with GMP-guidelines
- Responsible person for handling of narcotics towards governmental authorities (Swissmedic)

**09/2019 – 10/2020**

### **Head of Research & Development / Deputy Executive Director**

Arbolea GmbH, Liestal (Switzerland)

- Drug discovery for novel Cannabinoid agonists for CB<sub>1</sub>- / CB<sub>2</sub>-receptors
- Coordination of external assay testing
- Leading of the synthesis / production team
- Evaluation and implementation of new processes
- Optimization of existing synthesis procedures

## Professional Experience (continued)

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06/2013 – 09/2019

### Head of Research & Development / Project Leader R&D

Lipomed AG, Arlesheim (Switzerland)

- Initiation and implementation of special projects
  - Synthesis of novel androgen receptor agonist (steroids and SARMS) and external drug characterization via cell-based assays
  - Synthesis (5 steps) of novel deuterated and fluorinated Lysergamids and characterization via HPTLC (co-operation with CAMAG AG)
  - Synthesis (9 steps) of novel Phenethylamines e. g. 2C-B-Fly-NBOMe (co-operation with Prof. Dr. Auwärter)
  - Market assessment of the “Dried Blood Spot”-System (DBS) (co-operation with CAMAG AG)
- Synthesis of forensic reference materials according to GMP, ISO Guide 34, ISO 17025
  - Synthesis (7 steps) of synthetic Cannabinoid HU-201
  - Synthesis (5 steps) of Psilocybin
- Project planning of custom synthesis
- Substance analytics according to GMP, ISO Guide 34, ISO 17025 (LC-MS, NMR, IR)
- Support of the LC-MS-system
- Evaluation of specific NMR-arrays (2D-NMR, 19F-NMR, deuterated substances)
- Process improvement and evaluation / review of applicable MPLC-systems of Cladribin-purification
- Preparation of Litak<sup>®</sup> / Cladribine (API) according to GMP-Guidelines
- Documentation of manufacturing procedures in compliance with GMP-guidelines
- Interface between Marketing and R&D
- Drafting of the annual narcotic record for governmental authorities (Swissmedic)

04/2012 – 03/2013

### Head of Research & Development Department

THC Pharm GmbH, Frankfurt (Germany)

- Development of a GMP-compliant API-production of Psilocybin (early stage to pilot scale)
- Initiation and conducting of business and special projects at GMP-level
- Project planning of custom synthesis
- Realization of synthesis
- Substance analytics (HPLC, GC-MS, NMR) including creation of certificates (COA) and material safety data sheets (MSDS)
- Maintenance and update of proprietary web shop
- Customer Relations
- Drafting of the annual narcotic record for governmental authorities (BfArM)

## Professional Experience (continued)

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**07/2011 – 03/2012**

### **Lableader Synthesis**

LGC GmbH, Luckenwalde (Germany)

- Preparation of forensic reference materials according to ISO 17034 and ISO 17025
- Planning and conducting of synthetic procedures
- Ensuring compliance with company safety policies
- Analytic quality control of prepared substances (GC-MS, NMR, IR)
- Drafting of the annual narcotic record for governmental authorities (BfArM)

**07/2010 – 06/2011**

### **Scientific Co-Worker (Postdoc)**

Research Group of Prof. Dr. Sigfried Waldvogel  
Johannes-Gutenberg-Universität, Mainz (Germany)

**11/2005 – 06/2010**

### **Scientific Co-Worker (PhD-Student) including Dissertation**

Research Group of Prof. Dr. Klaus Müllen  
Max-Planck-Institut für Polymerforschung, Mainz (Germany)

- Composition and synthesis of complex dendritic systems up to 15 steps

Dissertation Title:

*Functionalised Polyphenylendrimers for Detection of Hazardous Compounds*

## University Education

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**03/2001 – 10/2005**

### **Diploma in Chemistry**

Ludwig-Maximilians-Universität, München (Germany)

- Synthesis (6 steps) of (4,5-Diamino-1-heptanol)-dichloroplatin (III)-complex

Diploma Thesis Title:

*Synthesis of Novel Anti-Tumor Active cis-Platin-Compounds*

## University Education (continued)

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**11/1998 – 02/2001**      **Intermediate Diploma in Chemistry**  
Technische Universität, München (Germany)

Educational focus:  
Organic Synthesis, Metal-Organic Chemistry, Natural Product Synthesis,  
Drug Design, Pharmacology, Toxicology

## Qualifications

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11/2017      *“Handling of controlled substances”*  
Swissmedic / Schweizerisches Heilmittelinstitut, Bern (CH)

03/2017      GMP-training „Preparation of APIs“  
Concept Heidelberg, Hamburg (D)

09/2015      *“HPTLC for analysis of herbal drugs”*  
CAMAG, Muttenz (CH)

05/2014      *“Methods Development and Scale-Up in Flash Chromatography / HPLC”*  
Sigma Aldrich, Limburg (D)

12/2013      *“Methods Development of modern HPTLC”*  
CAMAG, Muttenz (CH)

## Skills

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Language Skills      German (Native Speaker)  
English (Fluent in spoken and written)

IT Skills      Expert Knowledge of Windows, DOS, Microsoft Office  
Expert Knowledge of Mestrec, Spartan, Isis and Chemdraw

Analytic Methods      HPLC, MPLC, LCMS, GCMS, MALDI-TOF-MS, FDMS, NMR (COSY, DOSY),  
FT-IR, ITC (isothermal titration calorimetry)

## Patents / Publications / Others

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- 03/2022      *"Novel Safrylamine derivates having prodrug properties"*  
PCT Patent Application, Patent-No. WO2022053696  
Inventor: Dr. Matthias Grill
- 02/2022      *"Novel Psilocin derivates having prodrug properties"*  
PCT Patent Application, Patent-No. WO2022038299  
Inventor: Dr. Matthias Grill
- 01/2022      *"Improved method for the production of lysergic acid diethylamide (LSD) and novel derivates thereof"*  
PCT Patent Application, Patent-Nr. WO2022008627  
Inventor: Dr. Matthias Grill
- 06/2021      Lecture "Synthetic Cannabinoids" at Federal Office of Public Health (BAG)  
Kanton Zug, Schweiz
- 05/2021      *"Separating the wheat from the chaff: Observations on the analysis of ly-ser-gamides LSD, MIPLA and LAMPA"*  
Drug Testing and Analysis  
Simon D. Brandt, John Moores University, Liverpool, UK
- 07/2020      Filing of own Patents about several novel neuromodulators
- 12/2019      *„Profiling of anabolic androgenic steroids and selective androgen receptor modulators for interference with adrenal steroidogenesis"*  
Biochemical Pharmacology  
Prof. A. Odermatt, Universität Basel, Schweiz
- „Novel protective group synthesis of androgen receptor modulators with steroidal and non-steroidal scaffolds"*  
ChemRxiv  
Prof. A. Odermatt, Universität Basel, Schweiz

## Patents / Publications / Others (continued)

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- 10/2018      *"Comparison of the behavioral responses induced by phenylalkyl-amine hallucinogens and their tetrahydrobenzodifuran ("FLY") and benzodifuran ("DragonFLY") analogs"*  
Neuropharmacology  
Prof. A. L. Halberstadt, University of San Diego, USA
- 10/2018      *"Screening method for the identification of forensic drugs"*  
CBS-Newsletter - CAMAG  
Collaboration CAMAG AG / Lipomed AG
- 11/2017      *"Identification and quantification of different cannabinoids in Cannabis sativa"*  
CBS-Newsletter - CAMAG  
Collaboration CAMAG AG / Lipomed AG
- 09/2018      *"Fully automated forensic routine dried blood spot screening for workplace testing"*  
Journal of Analytical Toxicology  
Collaboration CAMAG AG / Shimadzu Schweiz GmbH / Lipomed AG
- 01/2018      *"Fully automated drug screening of dried blood spots using online LC-MS analysis"*  
Journal of Applied Bioanalysis  
Collaboration Shimadzu Schweiz GmbH / CAMAG AG / Lipomed AG
- 03/2017      *"Detection of steroids and selective androgen receptor modulators"*  
CAMAG CBS-Newsletter 118  
Collaboration CAMAG AG / Lipomed AG
- 01/2017      *"Screening for phenethylamines in pre-workout supplements"*  
Poster Abstract HPTLC-Symposium  
Collaboration Universität Basel / CAMAG AG / Lipomed AG

## Patents / Publications / Others (continued)

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- 10/2016                      Lecture series "*Synthesis of novel phenethylamines*"  
within the framework of the annual GTFCh workshop (Gesellschaft für Toxikologische und Forensische Chemie), Universität Freiburg
- 02/2016 – 11/2019        Collaboration "*Toxicological characterization of androgens and SARMs*"  
Prof. Dr. Alex Odermatt, Division of Molecular and Systems Toxicology, Universität Basel
- 11/2015 – 10/2016        Collaboration "*Synthesis of novel phenethylamines*"  
Prof. Dr. Volker Auwärter, Universität Freiburg
- 09/2015                      "*In-process-control during synthesis of novel ergoline psychedelics by HPTLC-MS*"  
CBS-Newsletter - CAMAG
- 09/2013 – 01/2017        Collaboration "*Toxicological characterization of hallucinogens*"  
Prof. Dr. Matthias Liechti, Universität Basel
- 04/2013                      "*Guest Uptake by Rigid Polyphenylene Dendrimers acting as a Unique Dendritic Box in Solution Proven by Isothermal Calorimetry*"  
Macromolecules
- 02/2012                      "*Scaffold-Optimized Dendrimers for the Detection of the Triacetone Triperoxide Explosive using Quartz Crystal Microbalances*"  
ChemPlusChem Cover