Education Guidelines

"FACHPHARMAKOLOGE DGPT"/"FACHPHARMAKOLOGIN DGPT"

Training Committee, elected by the DGP

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Information for applicants

1. Prerequisites

The title "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT" is awarded on application by the German Society for Pharmacology and Toxicology (DGPT) to members of the German Society for Pharmacology (DGP) in the DGPT.

The title "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT" is to recognize high standards of knowledge, skills, experience and professional standing of primarily scientists with a background in life sciences or similar, which are professionally engaged in the field of Pharmacology.

Approved physicians and veterinarians are asked to strive for the board certification of "Physician or Specialist Veterinarian in Pharmacology and Toxicology" in accordance with the training guidelines of their chambers. In justified exceptional cases can they acquire the designation "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT".

Applicants should provide evidence of 5 years of experimental pharmacological activity following completed university studies in life sciences or similar (degree M.Sc., Diploma, or equivalent) or pharmacy (state exam, M.Sc. or equivalent), or in justified cases medicine or veterinary medicine (state exam, other degrees). This activity must be completed as full-time employment at a university institute or another equivalent research laboratory recognized by the DGPT as a training institution under the direction of a habilitated pharmacologist, a certified pharmacologist, or a physician or veterinarian specialist in pharmacology and toxicology or, in particularly justified cases, a pharmacologist otherwise authorized by the Board of the DGP. If you are not sure whether your institution qualifies as a training institution, please contact the *Training Committee*.

The completion of a doctorate at a recognized training institution under the supervision of a pharmacologist fulfilling the above-mentioned qualifications will be counted towards the period of further training with the time spent in full-time employment proven for this purpose, however, corresponding to a maximum of 4 years of full-time employment. The applicant's position in terms of remuneration during the doctoral phase has no influence on the recognition as full-time activity, if confirmed accordingly by the training institution.

In the case of part-time employment outside the doctoral phase, the period of further training is extended accordingly.

An activity completed in the field of anatomy, biology, biochemistry, experimental medicine, genetics, human genetics, immunology, clinical chemistry, clinical medicine, microbiology, molecular medicine, morphology, pathology, pathophysiology, physiology, toxicology or virology under the supervision of a qualified specialist can be credited to the further training for up to 1 year.

Furthermore, during the 5-year training period, the applicant must provide evidence of the minimum requirements in pharmacological training listed in Annex I in the form of 30 European Credit Transfer and Accumulation System credits (ECTS). Proof shall be provided, if possible, by certificate(s) from the training institution(s) or the DGPT. Recognition of credits from previous education, e.g. studies and doctorate, also in parts by the DGPT or its organs, is possible after examination of corresponding proofs.

2. Documents to be submitted

Applicants must provide written documentation of their training and previous work. In detail, the following must be submitted:

a) Checklist (Annex II)

b) Curriculum vitae

c) Certificates of academic and/or governmental degrees (B.Sc., M.Sc.; Diploma, state exam, doctoral degree, showing the requirement for continuing education)

d) Confirmation(s) from the supervisor(s) of the further training on the further training period completed by the applicant at the recognized training institution

e) Evidence of the further training (for details see Annex I and Annex II: Checklist)

3. *Expert Talk*

A consultation and preliminary review of the documents by the *Training Committee* one year before the final application is submitted is recommended. Upon final application, the *Training Committee* examines whether the documents are sufficient. When all requirements are fulfilled, the *Training Committee* will notify the applicant and schedule an *Expert Talk* with the applicant and two members of the DGP as examiners. One of the examiners should preferably be a member of the *Training Committee*, all examiners must have no conflicts of interest.

The content of the *Expert Talk* is the candidate's scientific and technical expertise and general pharmacological knowledge according to the given information in the checklist. The *Expert Talk* lasts a minimum of 45 minutes and a maximum of 1 hour and can be repeated 2 times.

If the skills and knowledge of the applicant correspond to the level of knowledge to be expected after the completed further training, the board awards the recognition as "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT".

4. Maintenance of Certification

The authorization to use the title "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT" expires with the end of the membership in the DGP.

Implementing regulations

"FACHPHARMAKOLOGE DGPT"/"FACHPHARMAKOLOGIN DGPT"

1. General information

a.) The applicant must prove by written documents, the certification of further education contents according to annex I and II in the amount of at least 30 ECTS and an *Expert Talk* that the applicant has comprehensive knowledge in one research subfield of experimental pharmacology, in-depth knowledge in two further research subfields and basic knowledge in half of the remaining fields.

b.) The DGPT confirms by awarding the professional title "Fachpharmakologe DGPT"/Fachpharmakologin DGPT" that an applicant is qualified for independent research in at least one important research subfield of experimental pharmacology and is able to assess experimental research in all fields.

c.) The qualification "Fachpharmakologe DGPT"/Fachpharmakologin DGPT" does not cover the performance of experiments that require legal approval, e.g. animal experiments.

2. Recognized training institution

Every institution that maintains a research laboratory under the direction of a habilitated pharmacologist, a specialist pharmacologist DGPT, or a physician or specialist veterinarian for pharmacology and toxicology or, in particularly justified cases, a pharmacologist otherwise authorized by the board of the DGP, may apply for recognition as a training center.

3. *Training Committee* "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT"

a.) Two pharmacologists elected by the General Assembly of the DGP in the DGPT form the *Training Committee* "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT".

b.) The term of office of the members shall not exceed 6 years.

4. Application procedure

a.) The application for the award of the professional title "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT" shall be submitted to the *Training Committee*.

b.) The following documents shall be attached to the application:

b1.) Completed checklist (Annex II)

b2.) Curriculum vitae according to the checklist

b3.) Certificates of academic and/or governmental degrees (B.Sc., M.Sc.; Diploma, state exam, doctoral degree, showing the requirement for continuing education)

b4.) Confirmation(s) from the supervisor(s) of the further training on the further training period completed by the applicant at the recognized training institution

b5.) Evidence of the further training (for details see Annex I and II: Checklist) of at least 5 years of specialized work at a suitable training institution under the direction of a habilitated pharmacologist, a specialist pharmacologist DGPT, a physician or specialist veterinarian for pharmacology and toxicology or another pharmacologist recognized by the Board of the DGPT. If applicable, evidence of work in the field of anatomy, biology, biochemistry, experimental medicine, genetics, human genetics, immunology, clinical chemistry, clinical medicine, microbiology, molecular medicine, morphology, pathology, pathophysiology, physiology, toxicology or virology, if this work is to be credited for a

maximum of 1 year towards the period of further training. During the training period, a minimum of 30 ECTS must have been earned according to Annex I and II, which must be documented in the attached documents.

c.) The *Training Committee* authorized by the Executive Board shall request missing documents or reject insufficient applications.

5. Examination procedure: *Expert Talk*

The examination is carried out in the form of an *Expert Talk* and on the basis of the submitted documents.

a.) The *Training Committee* decides whether the submitted documents justify admission to the *Expert Talk*. In cases of doubt, the written documents can also be forwarded to the DGP board.

b.) The *Expert Talk* shall be conducted with at least two expert examiners. One of the examiners should preferably be a member of the *Training Committee*. All examiners must have no conflicts of interest. In the *Expert Talk* is to be determined whether the applicant has the general basic pharmacology knowledge as well as the deepened or comprehensive knowledge in the research areas indicated by the applicant. . The *Expert Talk* lasts a minimum of 45 minutes and a maximum of 1 hour and can be repeated 3 times.

c.) The result of the *Expert Talk* is communicated to the board in the form of a short result protocol and recognition or rejection is recommended. The board decides on the basis of the documents and the result protocol. The board can order a renewed admission to the *Expert Talk* at the earliest after a period of one year. The *Expert Talk can be repeated 2 times.*

d.) The *Expert Talk* is held at least twice a year. The dates are set by the *Training Committee* in consultation with the examiners and the candidates.

e.) The Board of Directors of the DGP in the DGPT may charge a reasonable fee for holding the examination and other expenses. The respective amount of the fee will be announced via the organs of the DGPT.

f.) The travel expenses incurred by the examiners shall be borne by the DGP in the DGPT.

6. Maintenance of Certification

a.) the authorization to use the title "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT" expires with the end of the membership in the DGP

b.) a simultaneous use of more than one title ("Specialist of Pharmacology and Toxicology" or "Specialist Veterinarian of Pharmacology and Toxicology" or "Fachpharmakologe DGPT"/"Fachpharmakologin DGPT ") is not in the sense of the DGPT. The use of additional titles by physicians and veterinarians is regulated by the chamber laws and professional regulations.

Annex I

This annex specifies 20 of the required 30 ECTS (900 h working time) in terms of content as continuing education subjects (Table 1). Furthermore, the appendix regulates individual recognition criteria.

Further training subjects

As part of the total of 30 ECTS (900 h of working time) to be proven, 20 ECTS must be completed in accordance with the below defined standards (= minimum requirement). The other 10 ECTS can be allocated as desired. In case of doubt, the *Training Committee* will decide on recognition of the training subjects.

Professional knowledge (minimum 9 ECTS) already acquired during studies can be recognized up to the extent specified. This must be proven by handing in details of the course (module description, number of hours, content or topic plan, examination result). The attendance of at least one Advanced Course offered by the DGP is required (0.5 ECTS).

Methodological skills (minimum 7 ECTS) can be recognized up to a maximum of 1 ECTS per subfield. These shall be proven in the form of original publications in recognized international journals, where the applicant is an author and the corresponding author certifies in writing that the respective experiments were carried out by the applicant in persona. Alternatively, methodological skills may have been acquired in training courses or during a lab exchange, which shall be proven by giving details of the course and a certificate if available or a reference letter from the hosting supervisor.

Key qualifications (minimum 4 ECTS) can be recognized based on the performance achieved or proven by course certificates.

The following ECTS apply for authorships:

- Original papers (published in recognized international journals)

    First or last authorship 2 ECTS

    Co-authorship 0.5 ECTS

- Reviews (published in recognized international journals)

    First or last authorship 1 ECTS

    Co-authorship 0.25 ECTS

- Research proposals (extramurally reviewed and funded)

    Main applicant 1 ECTS

    Co-applicant 0.25 ECTS

- Patents (granted)

    Main owner 1 ECTS

    Co-owner 0.25 ECTS

- Animal testing applications, genetic engineering applications or similar (approved)

    Main applicant 1 ECTS

    Co-applicant 0.25 ECTS

The following ECTS apply for presentations:

- Oral presentation (conference, invited talk) 1 ECTS
- Poster presentation (conference) 0.5 ECTS

Subject	**Field**	**Subfields**	**ECTS (minimum)**
Professional knowledge in Pharmacology	Scientific expertise Minimally 0.5 and maximally 2 ECTS per subfield Attendance of at least one Advanced Course DGP is required (0.5 ECTS)	See Annex II The attendance of at least one Advanced Course offered by the DGP is required (0.5 ECTS).	4.5
	General knowledge	See Annex II Knowledge in Pharmacodynamics and -kinetics is required	4.5
Methodological skills (up to 1 ECTS per subfield)	Molecular methods	Molecular biology, biochemistry, cell biology etc.	2.5
	Physiological methods	*In vivo* and *ex vivo* techniques: animal experimentation, electrophysiology, organ bath analysis, cell behavior analysis etc.	2.5
	Instrumental analytics	Omic-methods, imaging, etc.	1
	Drug-related techniques	Drug Screening, drug design, etc.	1
Key competences	Scientific writing	Original publications, reviews, reports. etc.	2
	Project planning and administrative writing	Grant proposals, patents, applications of animal experiment, genetic engineering, etc.	1
	Presentations	Oral presentation, poster	1

Exemplary calculation:

A candidate holds as first authorship on a cardiovascular-relevant GPCR signaling pathways in a peer-reviewed journal. The by the candidate used methods were tissue engineering, cAMP analysis,

contraction analysis, RT-PCR, and immunoblotting. The candidate presents the data at the German Pharm Tox Summit (GPTS) in a short talk and attends the Advanced Course of the DGP.

Professional knowledge	Scientific expertise	Cardiovascular	2 ECTS
		Signal transduction (Pharmacodynamics)	1 ECTS
		Advanced Course	0.5 ECTS
Methodological skills	Molecular methods	RT-PCR	0.5 ECTS
		Immunoblotting	0.5 ECTS
		cAMP production	0.5 ECTS
	Physiological methods	Tissue engineering (main method)	1 ECTS
		Contraction analysis	0.5 ECTS
Key competences	Scientific writing	First authorship	2 ECTS
	Presentation	Oral	1 ECTS
Sum			**9.5 ECTS**

Annex II: Checklist

Please complete this checklist and submit it with your other documents via email to the members of the *Training Committee*.

Dokuments	**Specification**	**Yes**
CV	Personal data	
	Education	
	Professional experience	
	Publications (divided in original publications, reviews, book chapters)	
	Reports or assessments for regulatory agencies	
	Conference contributions (oral presentations, posters, chairs) and invited talks At least one contribution at the GPTS is required.	
	Grants	
	Patents	
	Awards	
	Memberships in societies DGP or DGKliPha membership is required.	
	Reviewer activity	
Certificates	Undergraduate degree	
	Postgraduate degree	
	State exam	
	Doctoral degree	
	Habilitation	
Confirmation of the supervisor of the training institution	Confirming the duration of training and the expertise of the candidate	

Specific expertise and further educational training

Please provide documentation and certificates, if available.

Please note that the information provided below is the basis for the expert talk.

Ia) Professional knowledge: Scientific expertise

It is required to prove your expertise either by publications (incl. the dissertation) or a reference letter from your supervisor.

Scientific expertise	**Specification**	**Primary expertise**	**Secondary expertise**
Please select **one to three** topics for your primary expertise and at least two topics for your secondary expertise. Please provide **PDF files** of three publications related to your pharmacology expertise (at least one first or last authorship) or other proves for your expertise (e.g. reports for authorities etc.).	Pharmacodynamics (incl. signal transduction)		
	Pharmacokinetics		
	Pharmacogenomics		
	Pharmacovigilance		
	Pharmacoepidemiology		
	Pharmacoeconomics		
	Cardiovascular pharmacology		
	Cancer pharmacology		
	Immunopharmacology		
	Neuropharmacology		

If you are a co-author, please list your contribution on a separate sheet. Provide patent numbers and owners, if available.	Gastrointestinal pharmacology		
	Renal pharmacology		
	Endocrine pharmacology		
	Hepatic pharmacology		
	Pharmacology of sex hormones or other steroids		
	Drug interaction		
	Drug development and/or drug testing		
	Development of models for drug testing		
	Clinical trials		
	Drug approval and drug law		
	Toxicology		
	Other (please specify):		

Ib) Professional knowledge: General knowledge in pharmacology

Basic knowledge is expected in at least half of the given subjects. Knowledge in Pharmacodynamics and Pharmacokinetics is required. Documentation of the further knowledge in Pharmacology shall be documented.

General pharmacology knowledge	**Specification**	**Acquired in class**	**Teaching experience**	**Other**
First column: Please check all subjects you have studied in university or other formal education. Second column: Please check all subjects you have taught. Third column: Please check all subjects in which you have basic knowledge acquired through other opportunities. Please specify your choices on a separate sheet (e.g. module descriptions, class schedules, certificates or similar).	Pharmacodynamics (incl. signal transduction)			
	Pharmacokinetics			
	Pharmacogenomics			
	Pharmacovigilance			
	Pharmacoepidemiology			
	Pharmacoeconomics			
	Cardiovascular pharmacology			
	Cancer pharmacology			
	Immunopharmacology			
	Neuropharmacology			
	Gastrointestinal pharmacology			
	Renal pharmacology			
	Endocrine pharmacology			
	Hepatic pharmacology			
	Pharmacology of sex hormones or other steroids			
	Drug interaction			
	Drug development and/or drug testing			
	Development of models for drug testing			
	Clinical trials			
	Drug approval and drug law			
	Toxicology			
	Other (please specify):			

II) Methodological skills

Please fill in the table according to your technical expertise. It is required to prove the expertise either by publications (incl. the dissertation), by handing in course descriptions, or a reference letter from a supervisor (own institution or a hosting institution in case of an external lab exchange).

Technical expertise	**Specification** (The below given techniques are examples and should be modified to match your expertise. The list can be extended as required.)	**Practical experience**	**Theoretical knowledge**
Molecular methods Molecular biology	Cloning		
	Etc.		
Molecular methods Cell biology	2D Cell culture		
	Etc.		
Molecular methods Biochemistry	SDS-PAGE		
	Etc.		
Physiological methods *In vivo*-techniques, physiological readouts	Animal handling		
	Contractility analyses in the organ bath		
	Etc.		
Physiological methods Electrophysiological methods	Patch clamping		
	Etc.		
Instrumental analytics Imaging techniques	Fluorescence microscopy		
	Etc.		
Instrumental analytics Omic techniques	RNA sequencing		
	Etc.		
Drug-related techniques	Concentration/Dose-response analyses		
Other techniques and methodologies	Data analysis		

III) Advanced Courses in Pharmacology or Clinical Pharmacology by the DGPT

Attendance of at least one Advanced Course in Pharmacology or Clinical Pharmacology is required. Please provide the certificate(s).

Number of attended courses, year	

IV) Key competences and other relevant courses, knowledge, skills, etc.

Subject (The list can be extended as required.)	**Practical experience**	**Theoretical knowledge**	**Certificate yes/no**
GLP, GCP, GMP or similar			
Regulatory affairs			
Animal experimentation course			
Biosafety course			
Radiation protection course			
Scientific writing			
Administrative writing (patent, applications of animal experiment, genetic engineering, etc.)			
Project management			
Presentation techniques			

V) ECTS calculation table

Subject	**Field**	**Subfields**	**ECTS**
Professional knowledge in Pharmacology	Scientific expertise Minimally 0.5 and maximally 2 ECTS per subfield Attendance of at least one Advanced Course DGP is required (0.5 ECTS) **Min. 4.5 ECTS**		
	General knowledge **Min. 4.5 ECTS**		
Methodological skills	Molecular methods		

(up to 1 ECTs per subfield)	**Min 2.5 ECTS**		
	Physiological methods **Min. 2.5 ECTS**		
	Instrumental analytics **Min. 1 ECTS**		
	Drug-related techniques **Min. 1 ECTS**		
	Other		
Key competences	Scientific writing **Min. 2 ECTS**		
	Project planning and administrative writing **Min. 1 ECTS**		
	Presentations **Min. 1 ECTS**		
Other			
Sum			**Min. 30 ECTS**