

European Training Network Positions in H2020 ETN

AGePOP

We are pleased to announce 11 Early Stage Researcher (ESR) positions open within the context of the recently granted European Training Network project **AGePOP – Drug Absorption in Geriatric Patients and Older People: a training network innovating drug development for the advanced age population.**

The AGePOP European Training Network (ETN) will boost Europe's innovation capacity and leadership in oral drug development. Its multisectoral approach will train 11 Early Stage Researchers to become the future experts in drug development for the advanced age population, shedding light on an urgent need of our ageing society. Following a multidisciplinary strategy, the ESRs will collect the first-ever dataset of physiological characteristics of the GI tract of older people and geriatric patients, developing novel *in vitro* and *in silico* tools, e.g. a mobile test kit to evaluate gastric emptying kinetics and an absorption risk calculator to predict adverse effects from altered pharmacokinetics.

The AGePOP consortium of 14 partners from 5 countries, will provide 11 ESRs with a unique Europe-wide learning experience, at the intersection between research excellence in oral drug products and expertise in clinical research and practice, preparing them to lead their future careers with confidence and success. The ESRs will be hosted by one of the six AGePOP Beneficiaries:

- National and Kapodistrian University of Athens (Greece)
- Katholieke Universiteit Leuven (Belgium)
- Universität Greifswald (Germany)
- Bayer AG (Germany)
- Merck Healthcare KGaA (Germany)
- F. Hoffmann- La Roche AG (Switzerland).

All host organisations will offer the possibility of secondments in a different sector, at either another Beneficiary's institution or at AbbVie Deutschland GmbH & Co KG (Germany), AstraZeneca AB (Sweden), Janssen Pharmaceutica NV (Belgium), the Korgialenio-Benakio Red Cross Hospital (Greece), Novartis Pharma AG (Switzerland), UCB Pharma GmbH (Belgium) or the University Medicine Greifswald (Germany).

For further information on the project please visit the AGePOP website: www.agepop.eu

What we offer

The successful candidates will benefit from an international scientific network of academic partners with research excellence in oral drug products, researchers from leading pharma companies as well as individual and network-wide training modules, including transferable skills courses. Furthermore, each ESR will be supervised by an Industry-Academia supervisory team consisting of at least one supervisor from each field. The ESRs will receive an attractive salary in accordance with the MSCA regulations of Early Stage Researchers.

Each ESR position in AGePOP allows the researcher to work towards a PhD at one of our three leading academic institutions. The ESRs will be recruited within 2021 for a duration of 36 months. Every ESR will work on an independent research project which will be flexible enough to match the competence and goals of the candidate.

Marie Skłodowska-Curie ESRs are paid an attractive gross salary of 3,270 €/month for 36 months (as defined in MSCA guidelines). The exact (net) salary will be confirmed upon appointment and is dependent on local tax, social and health insurance regulations and on the country correction factor (to allow for the difference in cost of living in the different EU Member States). Each ESR will also be compensated with a Mobility Allowance of 600 €/month, and, for researchers who have a family, a Family Allowance of 500 €/month. All amounts are subject to deductions and taxes. Family is defined as persons linked to the researcher by (i) marriage, or (ii) a relationship with equivalent status to a marriage recognized by the national legislation of the country of the beneficiary or of the nationality of the researcher, or (iii) dependent children who are actually being maintained by the researcher; family status is determined at recruitment and does not evolve.



Qualifications

- Master's degree in Pharmaceutical Sciences, Biology, Biomedical Sciences or equivalent that qualifies for doctoral studies
- Proof of English proficiency as communication and teaching language throughout AGePOP is English (e.g. IELTS, TOEFL or similar test, not for native speakers).

Eligibility criteria

Specific Eligibility Criteria of the H2020 Marie Skłodowska-Curie programme:

- At the time of recruitment, the applicants should be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.
- Mobility rule: At the time of recruitment, applicants should not have resided or carried out main activity (studies, work, etc.) in the country of the host for more than 12 months in the 3 years prior to the recruitment date.

Applications

Complete applications in English should include a motivation letter, full CV, transcripts, English language proficiency certificate(s) (not for native speakers), and two recommendation letters or complete contact information of two referees, and should be submitted by email as a single pdf-file to apply@agepop.eu.

- Please clearly **indicate in the subject line which position you are applying for**, e.g. 'AGePOP application: ESR 02, ESR 05, ESR11'.
- The **PDF form 'Eligibility Check' must be filled in and submitted** with your application.
- All applications have to be **submitted to the above address by 31 January 2021** at 23:59 (CET).

Please note that applications are handled confidentially but may be shared with the supervisors in the project, if necessary.

Open positions

ESR 01: The oral formulations swallowability and esophageal transit in older populations	
Project Description It is the goal of the project to assess the swallowing capability and esophageal transit characteristics in the older population and to determine the type and size of oral drug formulations preferred by older people. Based on the results and the use of in vitro tools simulating the esophageal transit oral dosage forms with improved swallowability properties will be designed. Expected Results: Novel relevant data on the prevalence of swallowing difficulties in the older populations and the physiologic characteristics of the esophageal transit will be generated. The project outcomes will enable development of specific oral formulations for patients with swallowing difficulties. The project ultimately aims to increase compliance and efficacy of drug therapies in geriatric patients.	
Essential Background: Master or Diploma or Second state examination in Pharmacy	Desirable Background: Experiences in Pharmaceutical Technology / Biopharmaceutics (Master, Diploma)
Host Institution: F. Hoffmann- La Roche AG, Switzerland	Supervisors: Dr. C. Stillhart, Dr. S. Page
Local Requirements: Sufficiently high ability to understand and express themselves in written and spoken English as well as in written and spoken German	
PhD institution: Universität Greifswald (UG), Germany	
Planned Secondments: Host: UG; Supervisors: M. Gollasch and W. Weitschies Host: UG; Supervisors: N. Hosten W. Weitschies	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)



ESR 02: Gastric emptying in older people assessed by salivary caffeine concentrations	
Project Description It is the goal of the project to evaluate gastric emptying kinetics in different groups of older people by determining the salivary concentrations of a suitable biomarker. Furthermore, a mobile test kit of the salivary tracer technique will be developed and included in a health feature. It will be investigated whether changes in gastric emptying of liquids and solid food as well as in transit times of oral formulations can be identified and can be correlated with age and disease in different groups of older patients. The data basis will be enlarged by the use of the mobile test kit application for further use in in vitro and in silico tools. Expected Results: New knowledge on the intra- and inter-variability gastric emptying rates in the older population will be generated. The project outcomes will enrich existing biorelevant <i>in vitro</i> tools, facilitating the development of drug forms specifically designed for geriatric and older people.	
Essential Background: Master or Diploma or Second state examination in Pharmacy	Desirable Background: Experiences in Pharmaceutical Technology / Biopharmaceutics (Master, Diploma)
Host Institution: Universität Greifswald, Germany	Supervisors: Prof. W. Weitschies, PD Dr. A. Seidlitz
Local Requirements: Sufficiently high ability to understand and express themselves in written and spoken English as well as in written and spoken German	
PhD institution: Universität Greifswald, Germany	
Planned Secondments: Host: Roche, Switzerland; Supervisor: C. Stillhart	
Recurrent hospital visits: Host: UG; Supervisor: M. Gollasch	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

ESR 03: The protein digestion and related micronutrient absorption profile in geriatric patients undergone bariatric surgery	
Project Description The aims of the project are to i) assess protein and related micronutrient absorption in bariatric patients aged 65+; ii) assess micronutrient kinetics related to muscle strength in bariatric post-surgery patients aged 65+; iii) assess the influence of a low-grade inflammation on absorption process. Therefore different substudies are set up, namely: <ul style="list-style-type: none"> • protein digestion and malabsorption study using a breath test with an egg protein based test meal. • assessment the incorporation of dietary protein derived amino acids de novo synthesized muscle protein. • Single-dose pharmacokinetic study with different micronutrient supplements. Focus micronutrients are iron, zinc and vitamin B12. Selection of micronutrients is based on their relevance for protein synthesis. • PhenFlex oral challenge test to compare of phenotypic flexibility of the bariatric patients to similar aged population. The test allows to predict the sensibility towards protein absorption/digestion. Expected Results: In sights in the nutrikinetik and dynamics of proteins and related micronutrients, relevant in the context of muscle mass.	
Essential Background: Master's degree in medical, biomedical sciences, bio-science engineering, pharmaceutical sciences, nutrition or other relevant MSc with an interest in nutrition, gastroenterology and physiology	Desirable Background: Background knowledge of statistics and gastrointestinal techniques is an asset as well experience of working with patients. Interactions with patients is required for this position therefore soft skills are an asset. Generic competences: dynamic; organizing skills; result-oriented; communicating; convincing; accurate; analyzing; team worker; independent, problem-solver
Host Institution: Katholieke Universiteit Leuven, Belgium	Supervisors: Prof C. Matthys, Prof. Dr. T. Vanuytsel
Local Requirements: Ability to speak Dutch is an asset, as well as knowledge of gastrointestinal techniques.	
PhD institution: Katholieke Universiteit Leuven, Belgium	
Planned Secondments: Host: Bayer, Germany; Supervisor: J. Schlender	
Planned Starting Date: 1 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)



ESR 04: Physicochemical characteristics of upper gastrointestinal contents of older people and their impact on oral drug absorption	
Project Description This project has 3 objectives: 1. Characterization of the composition of contents in the fasted stomach and duodenum of older people; 2. Development of media for evaluating the performance of drug products to be administered to older people; 3. Evaluation of differences in the composition of luminal contents of older people from healthy adults and geriatric patients on oral drug absorption. Expected Results: New in vitro methodologies performance evaluation of orally administered drug products in older people	
Essential Background: Master or Diploma or Second state examination in Pharmaceutical, Biomedical or Chemical Sciences.	Desirable Background: Experiences in Pharmaceutical Technology, Biopharmaceutics, Analytical Chemistry
Host Institution: National and Kapodistrian University of Athens, Greece	Supervisors: Dr. M. Vertzoni, Prof. C. Reppas
Local Requirements: Candidates should preferably have basic knowledge of Greek language. Selected candidate will be requested to attend Greek language courses upon recruitment.	
PhD institution: National and Kapodistrian University of Athens, Greece	
Planned Secondment: Host: Novartis, Switzerland; Supervisor: A. Kourentas	
Recurrent hospital visits: Host: Red Cross Hospital of Athens; Supervisor: C. Goumas	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

ESR 05: Physicochemical characteristics of upper gastrointestinal contents of geriatric patients and their impact on oral drug absorption	
Project Description This project has 3 objectives: 1. Characterization of the composition of contents in the fasted stomach and duodenum of geriatric patients with diabetes, Alzheimer's/Dementia and Parkinson's disease; 2. Development of media for evaluating the performance of drug products to be administered to geriatric patients 3. Evaluation of differences in the composition of luminal contents of geriatric patients from healthy adults and older people on oral drug absorption. Expected Results: New in vitro methodologies for performance evaluation of orally administered drug products in geriatric patients with geriatric patients with diabetes, Alzheimer's/Dementia and Parkinson's disease.	
Essential Background: Master or Diploma or Second state examination in Pharmaceutical or Biomedical Sciences.	Desirable Background: Experiences in Pharmaceutical Technology, Biopharmaceutics, Analytical Chemistry
Host Institution: National and Kapodistrian University of Athens, Greece	Supervisor: Prof. C. Reppas, Dr. M. Vertzoni
Local Requirements: Candidates should preferably have basic knowledge of Greek language. Selected candidate will be requested to attend Greek language courses upon recruitment.	
PhD institution: National and Kapodistrian University of Athens, Greece	
Planned Secondment: Host: UCB, Belgium; Supervisor: P. Berben	
Recurrent hospital visits: Host: Red Cross Hospital of Athens; Supervisor: C. Goumas	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)



ESR 06: The real-life dosing conditions of geriatric patients	
Project Description It is the goal of the project to monitor and document the real-life dosing conditions of geriatric patients in ambulant care, nursing homes and hospitals and to record the timing of dosing with respect to meals, size and composition of food and drink intake, volume of fluid co-administered with the drug products as well as possible manipulations of the drug products (e.g. crushing, sprinkling). Expected Results: New information on real-life dosing conditions of geriatric patients in different environments will enable the development of age-appropriate medication based on the behavioural inputs gathered. The data collected will be used to enrich biorelevant <i>in vitro</i> tools.	
Essential Background: Master or Diploma or Second state examination in Pharmacy	Desirable Background: Experiences in Pharmaceutical Technology / Biopharmaceutics (Master, Diploma)
Host Institution: Universität Greifswald, Germany	Supervisors: Prof. W. Weitschies, PD Dr. A. Seidlitz
Local Requirements: Sufficiently high ability to understand and express themselves in written and spoken English as well as in written and spoken German.	
PhD institution: Universität Greifswald, Germany	
Planned Secondments: Host: AZ; Supervisor: J. Mann	
Recurrent hospital visits: Host: UG; Supervisor: M Gollasch	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

ESR 07: The effect of malnutrition and polypharmacy in aging on gastrointestinal (GI) transit time, gastric fluid emptying and pH	
Project Description Gastrointestinal factors such as pH and transit times are important determinants for drug absorption. Age-related motility and pH changes, but also malnutrition and the use specific drug classes are assumed to influence these GI factors. These factors are highly prevalent in geriatric patients. Hence, we will investigate the influence of the former on pH and transit times by means of clinical studies using the Smartpill or salivary tracer techniques. The data will further be used in <i>in vitro</i> tools and PBPK modelling in order to predict the effect on oral drug absorption in older patients in collaboration with Abbvie and the consortium. Objectives: 1) Assess the effect of (i) advanced age, (ii) malnutrition and (iii) the intake of neuroleptics and anticholinergics on transit times, gastric fluid emptying and pH in geriatric patients; 2) Assess the relevance of these effects on oral drug absorption by applying the <i>in vivo</i> data in (i) biorelevant <i>in vitro</i> tools and (ii) PBPK modelling. Expected Results: new knowledge on the effect of frequently used drugs and malnutrition (common in older age) on transit times and GI pH levels. The project will provide reference data to improve <i>in vitro</i> tools and PBPK modelling.	
Essential Background: Master degree in pharmaceutical or (bio)medical sciences or equivalent	Desirable Background: Experience in (old age) medicine and/or pharmacokinetics are desirable
Host Institution: Katholieke Universiteit Leuven, Belgium	Supervisors: Prof. Dr. J. Tournoy, Prof. Dr. I. Spriet
Local Requirements: Graduated cum laude or higher in order to enter the KULeuven PhD program, preferentially a Dutch speaker, or willing to learn Dutch.	
PhD institution: Katholieke Universiteit Leuven, Belgium	
Planned Secondments: Host: Abbvie, Germany; Supervisor: M. Koziolok	
Planned Starting Date: 01 May 2020	Application Deadline: 31 January 2021 at 23:59 (CET)



ESR 08: Intestinal drug disposition in older people and in geriatric patients with Alzheimer's disease	
Project Description Assess the effect of advanced age and of Alzheimer's disease on drug disposition in older people and in geriatric patients with Alzheimer's disease in relation to intestinal transporters and enzymes. Gastrointestinal drug and formulation behavior will be explored using the GI-sampling technique (relevant examples: see http://ungap.eu/Glsampling)	
Expected Results: unique insight into alterations in drug disposition in older people and geriatric patients with Alzheimer's disease. In particular: 1) new reference data on GI drug behavior and the abundance and activity of intestinal transporters and enzymes; 2) improved PBPK models to evaluate transporter- and/or enzyme-mediated intestinal drug absorption and drug-drug interactions.	
Essential Background: Master degree in Pharmaceutical Sciences or in Biomedical Sciences	Desirable Background: Master thesis work and/or experience in pharmaceutical sciences
Host Institution: Katholieke Universiteit Leuven, Belgium	Supervisors: Prof. P. Augustijns, Prof. Dr. T. Vanuytsel
Local Requirements: Applicants should possess a university degree	
PhD institution: Katholieke Universiteit Leuven, Belgium	
Planned Secondments: Host: Merck; Supervisor: A. Lehmann	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

ESR 09: The leakiness of gastrointestinal epithelium of older people and its impact on oral drug absorption	
Project Description This project has two objectives: 1. Exploration of the paracellular permeability of gastric epithelium, epithelium of small intestine and epithelium of large intestine of older people based on the urinary excretion of selected sugars; 2. Evaluation of the impact of differences in paracellular permeability from published data in adults on oral drug absorption	
Expected Results: Potential differences between adults and older people in paracellular oral drug absorption.	
Essential Background: Master or Diploma or Second state examination in Pharmaceutical or Biomedical Sciences.	Desirable Background: Experiences in Pharmaceutical Technology, Biopharmaceutics, Analytical Chemistry
Host Institution: National and Kapodistrian University of Athens, Greece	Supervisors: Dr. M. Vertzoni, Prof. C. Reppas
Local Requirements: Candidates should preferably have basic knowledge of Greek language. Selected candidate will be requested to attend Greek language courses upon recruitment.	
PhD institution: National and Kapodistrian University of Athens, Greece	
Planned Secondments: Host: Janssen Pharmaceutica, Belgium; Supervisor: C. Mackie	
Recurrent hospital visits: Host: Red Cross Hospital of Athens, Supervisor: C. Goumas	
Planned Starting Date: 01 May 2021	Application Deadline: 31 January 2021 at 23:59 (CET)



ESR 10: Application of PBB/PBPK software tools to predict oral drug absorption in older people and geriatric patients (WP2) and development of an absorption risk calculator to assess the probability of adverse effects in older people due to altered pharmacokinetics.	
ESR 10 will evaluate the predictability of Physiologically based Pharmacokinetic (PBPK) models in context of absorption in older people and geriatric patients. The candidate will utilize data from ESR 1-9 for improving the predictions of absorption-related processes in the advanced age population and will implement an absorption risk calculator to identify the probability of adverse events to happen due to altered absorption/pharmacokinetics.	
Expected Results: Use and improve PBPK models for evaluating the performance of orally administered drugs to older people and geriatric patients and propose an absorption risk calculator.	
Essential Background: Applicants should preferably have a Master's degree in a project-related field (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, Industrial Pharmacy).	Desirable Background: First insights into programming language (e.g. R) are beneficial but not a must. German as additional language skill is beneficial but not a must.
Host Institution: Merck Healthcare KGaA, Germany	Supervisors: Dr. S. Hansmann, Dr. A. Lehmann
Local Requirements: The candidate should be able to work in a diverse project team. A curious and innovative mindset is a prerequisite for the project as well as the ability to communicate results effectively and clearly to an interested scientific community.	
PhD institution: National and Kapodistrian University of Athens (NKUA), Greece	
Planned Secondments: Host: NKUA; Supervisor: C. Reppas	
Planned Starting Date: 01 August 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

ESR 11: Development of open access PBB/PBPK models to predict oral drug absorption in Geriatric Patients and Older People	
Project Description	
Inform an open-source PBB/PBPK database on the basis of vitro and in vivo data, setting a distinction between age- and/or disease-related impact on drug absorption; 2) Generate evidence for PBB/PBPK modelling and simulation towards older people by defining distinctive case examples to qualify the approach for the intended use.	
Expected Results: Mechanistically inform and holistically understand oral absorption changes with ageing and concomitant disease progression by integrating data generated by AGePOP ESRs-1-9 into a whole-body PBB/PBPK model. The project outcome will be perpetuated in an open-source PBPK software facilitating further research beyond the project context.	
Essential Background: M.Sc. (or equivalent graduation) in relevant area (e.g. pharmacy/pharmaceutical sciences, natural sciences, medicine, engineering, and/or mathematics).	Desirable Background: First insights into programming language (e.g. R, Matlab) are beneficial but not a must. Experience with mechanistic modelling and parameter estimation in ODE systems would be an advantage.
Host Institution: Bayer AG, Germany	Supervisors: Dr. J.-F.Schlender
PhD institution: Katholieke Universiteit Leuven, Belgium	
Planned Secondments: Host: KULeuven; Supervisor: P. Augustijns	
Planned Starting Date: 01 August 2021	Application Deadline: 31 January 2021 at 23:59 (CET)

