



The objectives of FragNet are to (a) train a cohort of ESRs across FBLD methods and (b) develop individual skills in research into either new methods in FBLD or to apply FBLD to interrogate biological systems.

We are looking for highly motivated and talented students with a MSc degree who are interested in an ambitious multidisciplinary project on Fragment-Based Lead Discovery (FBLD).

At this moment we have 15 vacancies



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ESR5: Biophysics Based FBLD

Host: ZoBio BV, The Netherlands (PhD enrolment at VU University Amsterdam)

Industrial supervisor: dr. Gregg Siegal (Zobio)

Academic supervisor: prof. dr. Iwan de Esch (VU University Amsterdam)

Synopsis

FBLD technologies are continuously being improved to capture new opportunities. This project will investigate emerging antimicrobial targets with state-of-the-art biophysical screening technologies.

Objectives

1. Use NMR and SPR to screen a fragment library for validated hits against the target protein.
2. Develop NMR structural biology approaches to enable structure based drug design to elaborate hits to potent lead-like molecules.
3. Collaborate with the medicinal chemistry group of Prof. Iwan de Esch to design, synthesize and test elaborated hits.

Approach

This project will seek to develop inhibitors of critical bacterial and/or viral enzymes. In order to do so we will first concentrate on expressing the target in E. coli in a form that is suitable for biophysical and structural biological work. The recombinant protein will be used to screen for ligands specific for the target using ZoBio's proprietary, NMR-based TINS technology and SPR. The structure of validated hits from this effort bound to the target will be elucidated using protein observed NMR methods. Collaboration with other Fagnet members will bring the possibility to use X-ray crystallography as well. The structural information will be used to design compounds with better potency and ligand efficiency in collaboration with the medicinal chemistry group of Prof. Iwan de Esch. We expect to develop novel compounds that have biological activity in anti-bacterial or anti-viral assays.

Qualifications

A strong bachelors background in chemistry and physical chemistry is important. The successful applicant will have demonstrated some ability to recombinantly express and purify proteins. Any previous experience with NMR, either theoretical or practical, would be a help.

Key publications:

1. van Linden *et al.* Eur. J. Med. Chem. **2012**, 47, 493-500.
2. Vanwetswinkel *et al.* Chem. Biol. **2005**, 12, 207-216.
3. Shah *et al.* J. Med. Chem. **2012**, 55, 23, 10786-10790.



FragNet offers:

- Generously funded positions (duration 36 months) for 15 Early stage researchers (ESRs)
- High profile research projects in an Innovative European Training Network Program
- Excellent facilities for research and education
- Research training in both academic and industrial settings
- Training in state-of-the-art scientific and transferable skills
- Intensive contacts with international collaborators & secondments in other research laboratories

FragNet is looking for candidates that:

- are highly motivated and talented
- are able to work in a multidisciplinary team
- are keen on intra-European mobility to perform PhD research abroad
- have good communication skills

Selection criteria of the candidate:

- fulfil the eligibility criteria (ESR, international mobility) for Marie Skłodowska-Curie Innovative Training Networks (Horizon 2020)
- have a MSc degree in Life Sciences or obtain a MSc degree by September 2016
- have completed a research internship with relevant expertise
- have obtained high grades during his/her studies
- be fluent in English

Application procedure:

1. Send your application mentioning the **ESR number** in the subject line to hrm@fragnet.eu.
2. **Deadline for applications: 31 January 2016.**
3. Please send all the necessary information as **one pdf file** to hrm@fragnet.eu.
 - Detailed **CV** (include information on your BSc and MSc studies, languages, achievements, expertise)
 - **Motivation letter**, addressed to the FragNet selection committee, explaining your motivation why you apply with us. You have to indicate which FragNet ESR project(s) you are interested in (please motivate your selection and indicate which has your preference).
 - Provide contact details of at least 2 references (names, addresses, emails).
 - **Reference letter** from one of the enlisted references
 - Copies of your key educational certificates
 - **Transcript of Records** (i.e. documents enlisting your performance as BSc and MSc student over time by listing the course units or modules taken, credits gained and the grades awarded). If you have not completed your MSc degree yet include all grades obtained so far.
4. You may apply to more than one ESR position. If you do, submit a separate and dedicated application file for each position.
5. If applicable provide a language certificate Application is OPEN 3. The applications will be assessed by the FragNet selection committee, in which all group leaders are represented. Candidates are in particular evaluated on creativity, originality, intellectual capacity and quality of CV and motivation letter. The selection committee also takes into account interdisciplinary and gender balance.
6. Potential (Skype) interviews will be arranged with the group leaders associated with the ESR projects.
7. The ultimate starting date for the ESR projects is: **1st September 2016**, as the complete Fragnet ESR cohort will participate in the first Fragnet workshop that will be organized in York, UK in September 2016.

For other FragNet related questions please contact: info@fragnet.eu

Eligibility criteria

Eligibility criteria of Marie Curie Initial Training Networks apply. Only applicants who comply to the following conditions will be considered:

Conditions of experience (ESR)

Candidates must be, at the time of recruitment by the host organisation, in the first four years (full-time equivalent) of their research careers and have not yet been awarded a doctoral degree. This is measured from the date when they obtained the MSc degree which would formally entitle them to embark on a doctorate.

Conditions of international mobility

Eligible candidates may be of any nationality but must not, at the time of recruitment have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the 3 last years immediately prior to the reference date.



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