**Thesis Project Offer**

*Joint Research and Education Programme “Palestinian-German Science Bridge PGSB”  
Forschungszentrum Jülich GmbH & Palestine Academy for Science and Technology*

**Thesis type**

- ☐ BSc  
- ☐ MSc  
- ☒ PhD

**Intended starting date (approx.):** Juli-Sep 19

**Contact details of supervisor/responsible host at Forschungszentrum Jülich**

<table>
<thead>
<tr>
<th>Title*</th>
<th>Degree</th>
<th>First name*</th>
<th>Surname*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Degree</td>
<td>Prof Dr</td>
<td>Jörg</td>
</tr>
</tbody>
</table>

**Phone**

040 97540

**E-mail**

j.labahn@fz-juelich.de

**Function**

group leader

**Institute and homepage of institute**

ICS-6 (CSSB) https://www.cssb-hamburg.de/research/joerg_labahn/index_eng.html

**University affiliation in Germany**

Heinrich-Heine Universität Düsseldorf

**Co-Supervisor at Palestinian university (if applicable)**

<table>
<thead>
<tr>
<th>Title</th>
<th>Degree</th>
<th>First name</th>
<th>Surname</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Degree</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Phone**

**E-mail**

**University/institution**

Department/faculty/institute

**Project description**

Structural characterization of proapoptotic Par-4

Par-4 is a 332 amino-acid proapoptotic protein with tumor suppressor activity. It is predominantly unstructured and contains two important domains. It is well known for its selective induction of apoptosis in cancer cells and is attributed to the N-terminal SAC domain. The structure of the C-terminal coiled coil (CC) domain, which is mainly involved in many of its interactions, has been determined. Par-4 is a nucleo-cytoplasmic shuttling protein containing a nuclear localizing sequence (NLS) in the SAC domain and a nuclear export sequence (NES) in the CC domain. The current project is aimed at determining the structure of extended region from CC-domain to SAC domain. This may require to include some of the interacting proteins like autophagy receptor p62/SQSTM1 or nuclear export receptor CRM1 to induce structure and stability of Par-4 upon complex formation.

This project has the possibilities to explore molecular cloning, microbiology (protein expression), electrophoretic and chromatographic techniques (protein purification), biophysical characterization (mass spectroscopy, circular dichroism spectroscopy, fluorescence spectroscopy, etc.) and 3D structure determination (X-ray crystallography).

**Date**

31.1.2019

**Signature**

* required field