



**ViroiDoc – Advanced
Research on Viroid
Pathogenesis and
Control for Agricultural
Sustainability**

MSCA Doctoral Network

Open Call for 2 PhD Positions in Italy

Guidelines for Applicants

www.viroidoc.eu



Funded by the
European Union

Summary

Open Call for 2 Doctoral positions in the MSCA Doctoral Network

ViroiDoc - Advanced Research on Viroid Pathogenesis and Control for Agricultural Sustainability

This project is funded by the European Union (call HORIZON-MSCA-2023-DN-01-01).

The ViroiDoc Doctoral Network is seeking **2 highly motivated Doctoral Candidates (DC)** to join our research teams **in Italy**. Successful candidates will have the opportunity to participate in the **Marie Skłodowska-Curie Action (MSCA)**.

Positions are available to candidates who hold a university degree (MSc or equivalent) in plant biology, genetics, cell biology, biology, bioinformatics, biochemistry, chemistry, or a related discipline, completed no later than the start of the PhD project. The successful candidate should have a strong interest in conducting collaborative research in international and cross-sectoral contexts.

Application deadline: 5 September 2025, 23:59 CET.

For more information, please visit www.viroidoc.eu.

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1 Project overview

ViroiDoc - Advanced Research on Viroid Pathogenesis and Control for Agricultural Sustainability is a doctoral network comprising academic institutions and industry partners from Slovenia, Italy, Spain, France, Greece, Germany, Switzerland, the Czech Republic, Poland, the United States, and Argentina. Collectively, these institutions offer exceptional interdisciplinary research and an innovative training environment for 10 doctoral students¹, equipping them with the expertise to advance their **careers in research, product and service development in agriculture, biotech, biosensors, and biomedicine**.

ViroiDoc is committed to comprehensively understanding and addressing the challenges posed by viroids in alignment with the European Green Deal and the Farm-to-Fork strategy for sustainable crop production and food security.

International, multidisciplinary and cross-sectoral ViroiDoc doctoral training program encompasses **different types of training** activities:

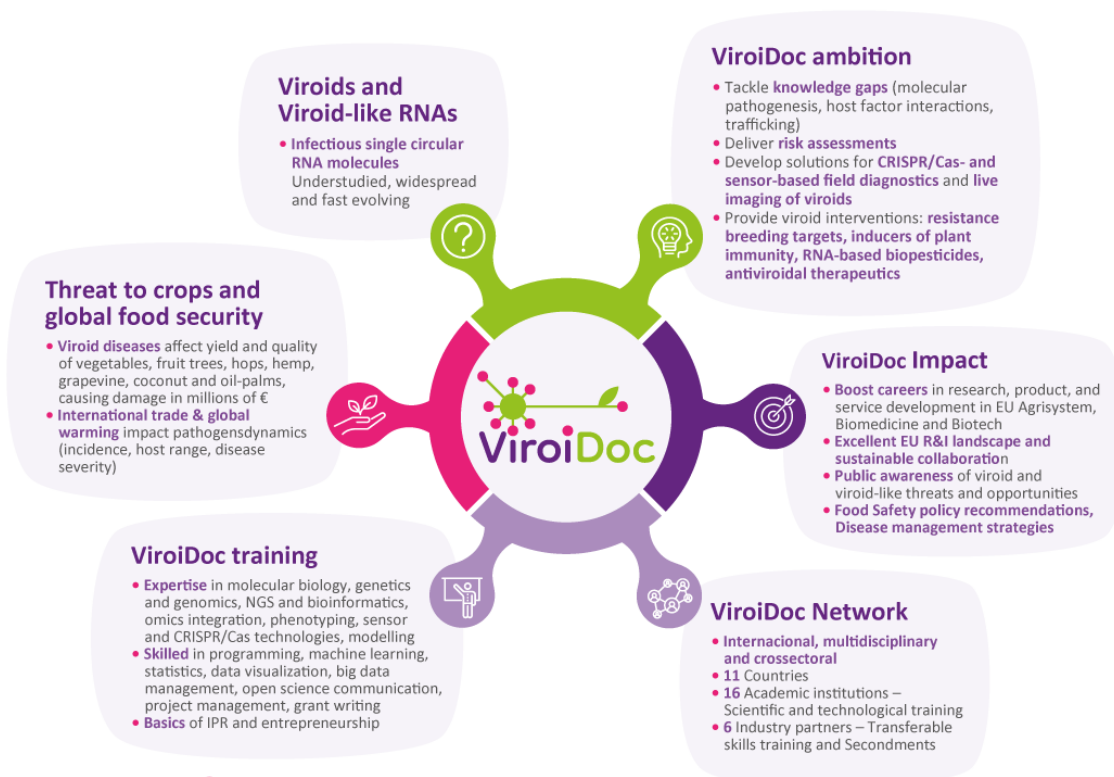
- 1) Individual Research Projects (IRP), including secondments,
- 2) ViroiDoc-specific training,
- 3) PhD programme and training provided by local doctoral schools.

ViroiDoc is a 4-year Marie Skłodowska-Curie Actions-Doctoral Network (HORIZON-MSCA-2023-DN-01-01) funded within the framework of the Horizon Europe Programme. The project started on the 1st of January 2025 and will last 48 months.

For more information, visit www.viroidoc.eu.

¹ The ViroiDoc Open Call for PhD positions in France, Germany, Greece, Slovenia and Spain [was open](#) from 12 March to 25 April 2025. Eight (8) Doctoral Candidates were [selected](#) in June 2025.

ViroiDoc at a glance


www.viroidoc.eu


Funded by the European Union

ViroiDoc project is funded by the European Union within the Horizon Europe MSCA Doctoral Networks. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

2 Open Call for 2 Doctoral positions in MSCA Doctoral Network "ViroiDoc" in Italy

ViroiDoc consortium is seeking **2 highly motivated Doctoral Candidates (DC)** to join our research laboratories **in Italy**. The successful candidates will participate in the **Marie Skłodowska-Curie Action (MSCA)**.

The Doctoral Network ViroiDoc offers exciting projects on viroids, the smallest plant pathogens, and viroid-like RNAs that have only recently been discovered outside the plant kingdom. The programme includes secondments to partner laboratories or companies involved in plant breeding and plant protection located in Slovenia and Spain.

Career development and international mobility of researchers is a key concept within the MSCA-DN framework. The ViroiDoc training program is international, multidisciplinary and cross-sectoral. The training program consists of individual research projects (IRP), training by local doctoral schools and specific ViroiDoc network-wide training in scientific, technical, digital, entrepreneurial and transferable skills. By exposure to an international environment and different industries you will build a valuable network of contacts, providing a solid foundation for future research collaborations and direct employment opportunities in both the academic and the non-academic sectors working in molecular biology, bioinformatics, or in product and service development in European agriculture and innovation development.

Open positions with Individual Research Projects (IRP) in Italy

Fellow researcher	Individual Research Projects	Host institution	PhD enrolment
DC7 Italy	<i>Dissection of viroid pathogenesis through omics and phenotyping approaches</i>	CNR-IPSP in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA)	UNIBA-DiSSPA
DC8 Italy	<i>Identification and characterization of novel infectious circular viroid-like RNAs in hosts belonging to different kingdoms</i>	CNR-IPSP in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA)	UNIBA-DiSSPA
Please note that the positions require the candidate to participate in secondments to other institutions, lasting up to a maximum of 1/3 of the 36-month MSCA-funded fellowship.			

Your profile:

- You have a university degree (MSc or equivalent) in plant biology, genetics, cell biology, biology, bioinformatics, biochemistry, chemistry or a related discipline, completed no later than by the start of the PhD project.
- You have a strong interest in conducting collaborative research in international and cross-sectoral contexts.

Specific eligibility criteria:

- You are not in a possession of a doctoral degree at the date of recruitment. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible.
- You have not resided or carried out your main activity (work, studies, etc.) in the country of the selected host laboratory for more than 12 months during the 3 years immediately before the recruitment date (the starting date indicated in the employment contract or equivalent direct contract).
- You can communicate in both written and spoken English (language certificate B2-C2 required, see language proficiency in line with the [Common European Framework of Reference for Languages - CEFR](#)).

Note: An overview of each research and training project on offer, with requirements for applicants are described in chapter 3 of this document. Please read the project descriptions carefully to ensure that you meet the required qualifications.

We offer:

- A competitive salary in accordance with the MSCA regulations for DC (including a living allowance, mobility allowance, and, if applicable, a family allowance and/or, special needs allowance for eligible recruited researchers).
- The opportunity to pursue a PhD in one of Europe's top research centres.
- The opportunity to work in an interdisciplinary environment and international team, with excellent equipment, infrastructure, and workspaces.
- Outstanding mentoring and career support.
- A comprehensive network-wide training and internship program, both in academia and industry.
- Training in cutting-edge techniques as well as other scientific, technical, digital, entrepreneurial and transferable skills through individual research projects accompanied by a multifaceted innovative training modules and secondment program.

Application deadline: 5 September 2025, 23:59 CET.

For submission guidelines, see chapter 6.

Should you require any additional information about the vacancies, please contact the coordinator of the ViroiDoc DN at info@viroidoc.eu.

3 List of research and training projects with requirements for candidates

The Individual Research Projects (IRP) are presented below. Please note that each institution offering a position has its own entry requirements for the Doctoral program, and the knowledge and skills that applicants must have.

Monthly gross salary information is indicated, which may be higher if/when a mobility allowance (600 EUR) is received. In addition, a monthly family allowance of EUR 660 may be granted if the eligibility conditions are met. A doctoral candidate may also apply for a special needs allowance. The request should include a description of the special needs, the type of support and the budget requested. The requested special needs allowance is limited.

3.1 DC7 in Italy: IRP Dissection of viroid pathogenesis through omics and phenotyping approaches



Host institution: CNR-IPSP in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA).



Individual Research Project objectives: Elucidation of signalling pathways and mechanisms altered in the host by nuclear and chloroplast replicating viroid infections in symptomatic and non-symptomatic tissues by omics approaches (analysis of transcriptome, methylome, small RNAome). Assessment of the role of epigenetic changes in the interplay between a nuclear replicating (PSTVd) and a chloroplast replicating viroid (CChMVd) with their hosts (tomato and chrysanthemum). Evaluation of the impact of symptomatic and latent viroid infections on plant performance by phenotyping (photosynthesis efficiency, stomatal conductance and thermal imaging) in symptomatic, non-symptomatic viroid-infected and non-infected plants. Integration of phenotyping and molecular data to identify potential targets for the development of strategies to counteract viroid infection.



Secondment at the Biotechnical Faculty UL in Slovenia. The DC will perform metadata analysis to identify common pathways/genes involved in pospiviroid infection and pathogenesis by comparing own omics data from PSTVd/ tomato with those under study in the UL on CBCVd/ hop. To confirm the *in silico* results, experimental analysis in hop will be performed for some selected genes.



Enrolment in Doctoral degree(s): The DC will participate in a three-year study program of the Doctorate School in Biodiversity, Agriculture and Environment of the Università degli Studi di Bari Aldo Moro (UNIBA, DiSSPA).



PhD supervisors: Francesco di Serio (CNR, Italy) and Tiziana Mascia (UNIBA, Italy) for doctoral degree and Jernej Jakše (UL, Slovenia) for secondment.



The candidate will gain: to clarify whether asymptomatic viroid infections can cause developmental defects and/or reduce photosynthetic efficiency in the absence of obvious symptoms. It is expected generate relevant data to determine the phytosanitary risk posed by latent viroids, providing a scientific basis for the adoption of appropriate control measures to limit their spread. Plant performance data in latent and/or early viroid infections will be linked to concomitant molecular changes in infected plants. This research could contribute to the development of novel early detection methods based on biosensors. The integration of phenotyping and molecular data will allow the identification of potential targets for the development of new strategies to counteract viroid infections.

CNR-IPSP / UNIBA-DiSSPA requires candidates to meet the following criteria

Specific Research and Technical Skills:

Any of the following demonstrated competences will be positively evaluated:

- Familiarity with RNA and DNA handling techniques and expertise in molecular biology methods (qPCR, RT-qPCR, molecular hybridization);
- Knowledge of bioinformatics and -omics data analysis and previous experience with plant phenotyping.
- Skills in design and perform experiments.
- Ability to work both as part of a team and independently, with strong collaborative aptitude, analytical thinking and good communication skills.
- Readiness to be involved in a multidisciplinary research environment.

Education Requirements: MSc degree (or equivalent) in Agricultural Sciences, Biochemistry, Biological Sciences, Molecular Biology, Biotechnology, Plant Pathology, Plant Sciences or related disciplines.

Salary: €3,311.00 per month, including social security contribution. Note that the amount is subject to change due to changes in Italian legislation.

The Research Environment: The Institute for Sustainable Plant Protection (**IPSP**) belongs to the National Research Council of Italy (**CNR**) and focuses on the study of plant responses to biotic and abiotic stress factors, aiming to identify resistance and adaptation mechanisms to enhance plant health in agriculture and forestry.

The CNR-IPSP unit in Bari, where the doctoral project will take place, has a long-standing expertise in plant virology and performs research in this field by combining biological and molecular approaches with the latest "omics" technologies. Our team has over 20 years of research experience on plant-associated viroids and viroid-like RNAs. We study the molecular pathways involved in plant-viroid interactions and investigate on the role of RNA silencing in viroid pathogenesis. We also develop high-throughput sequencing-based approaches for viroid identification and characterization.

The PhD student will be enrolled at the Doctorate School in Biodiversity, Agriculture and Environment at the University of Bari, a prominent public university in southern Italy. The university offers a PhD program that includes project management, research activities, publishing, and academic English, ensuring comprehensive supervision and training for students.

3.2 DC8 in Italy: IRP Identification and characterization of novel infectious circular viroid-like RNAs in hosts belonging to different kingdoms



Host institution: **CNR-IPSP** in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA).



Individual Research Project objectives: Identification and molecular characterization of novel viroids and viroid-like RNAs in plants and in fungi of agronomic interest (pathogenic and beneficial), in fungi of agri-food significance and in fungi isolated from the rhizosphere of different ecological niches. Evaluation of the effects of viroid-like RNA infection on fungal phenotype, pathogenicity and toxicity, to utilise these infectious agents as putative novel biocontrol agents and biostimulants or to identify them as putative regulators of mycotoxin expression. Functional studies of putative novel viroid-like encoded proteins.



Secondment at IBMCP (CSIC-UPV, Valencia) in Spain. The DC will study the enzymatic *in vitro* activity of ribozymes in the newly identified viroid-like circular RNAs.



Enrolment in Doctoral degree(s): The DC will participate in a three-year study program of the **Doctorate School in Biodiversity, Agriculture and Environment**, of the Università degli Studi di Bari Aldo Moro (UNIBA, DiSSPA).



PhD supervisors: Beatriz Navarro Ramirez (CNR, Italy) and Rita Milvia De Miccolis Angelini (UNIBA, Italy) for doctoral degree and Marcos de la Peña (CSIC-UPV, Spain) for secondment.



The candidate will gain: Characterization of the biodiversity of the viroid-like RNAs infecting plants and fungi of interest and other organisms from different ecological niches. Molecular and functional characterization of putative new ribozymes and viroid-like-encoded proteins. Defining the biological and ecological roles of viroid-like RNAs associated with fungal holobionts and their potential use for biotechnological applications in sustainable agriculture and human health and well-being.

CNR-IPSP / UNIBA-DiSSPA requires candidates to meet the following criteria

Any of the following demonstrated competences will be positively evaluated:

- Familiarity with RNA and DNA handling techniques and protein functional analysis.
- Expertise in molecular biology methods (qPCR, RT-PCR, molecular hybridization).
- Knowledge of bioinformatics and -omics data analysis.
- Skills in designing and performing experiments.
- Ability to work both as part of a team and independently, with strong collaborative aptitude, analytical thinking and good communication skills.
- Readiness to be involved in a multidisciplinary research environment.

Education Requirements: MSc degree (or equivalent) in Agricultural Sciences, Biochemistry, Biological Sciences, Molecular Biology, Biotechnology, Plant Pathology, Plant Sciences or related disciplines.

Salary: €3,311.00 per month, including social security contribution. Note that the amount is subject to change due to changes in Italian legislation.

The Research Environment: The Institute for Sustainable Plant Protection ([IPSP](#)) belongs to the National Research Council of Italy ([CNR](#)) and focuses on the study of plant responses to biotic and abiotic stress factors, aiming to identify resistance and adaptation mechanisms to enhance plant health in agriculture and forestry.

The IPSP unit in Bari, where the doctoral project will take place, has a long-standing expertise in plant virology and performs research in this field by combining biological and molecular approaches with the latest "omics" technologies. Our team has over 20 years of research experience on plant-associated viroids and viroid-like RNAs. We study the molecular pathways involved in plant-viroid interactions and investigate the role of RNA silencing in viroid pathogenesis. We also develop high-throughput sequencing-based approaches for viroid and viroid-like identification, contributing to the discovery of a new layer of biodiversity consisting of infectious circular RNAs carrying ribozymes.

The PhD student will be enrolled at the [Doctorate School in Biodiversity, Agriculture and Environment](#) at the University of Bari, a prominent public university in southern Italy. The university offers a PhD program that includes project management, research activities, publishing, and academic English, ensuring comprehensive supervision and training for students.

4 Indicative timeline

Indicative Open call for PhD positions in Italy timeline is as follows:

- **23 July 2025**: Launch of the open call.
- **5 September 2025, 23:59 CET**: Deadline for submitting applications.
- **September-October 2025**: Evaluation of candidates.
- **October 2025**: Notification of selected candidates.
- **From October 2025**: Start participation in ViroiDoc Network.
- **Duration of each fellowship**: 36 months and no longer than 31/12/2028.



5 Evaluation and selection procedure

ViroiDoc consortium sets up a central recruitment for the first and second round of recruitment, with the aim to ensure an open, transparent, impartial and equitable process in line with the [Code of Conduct for Recruitment](#) and the [European Charter and Code for the recruitment of researchers](#). By centralizing the process, the consortium will ensure that all candidates are evaluated using the same criteria, methods and documents. Beyond the application phase, candidates will be kept informed throughout the selection and recruitment process as outlined below:

1. **Eligibility check:** Applications will be evaluated after submission deadline. Complete applications must have the online application form duly filled in and submitted together with the required application documents. Only complete applications containing all requested documents will be evaluated. Ineligible applicants will be notified by the Project Manager.
2. **Stage 1:** Eligible candidates will proceed to be reviewed by the selection committee specific to the project. Applicants scoring more than 75% will be included in the initial ranking list and invited to an (online) interview (Stage 2).
3. **Stage 2:** All interviews will be conducted in English and the interview panel will be made up of at least 3 people ensuring an adequate gender balance and Equal Opportunities Officer. The interviews will be designed to explore candidates' self-introduction, motivation, expertise and skills. Interviews will be carried out online or live when possible. Each selection committee will develop a final report with reviews and scores (for each candidate). Applicants that score a minimum of 75% will be eligible for consideration.
4. **Offer of contract:** Applicants will be ranked according to their final score, and the top candidates for each DC will be offered a contract. In addition to the selected candidate, a reserve list will be created. If the top-ranked applicant declines the funding offer, the next candidate on the reserve list for that project will be offered a contract.

Evaluation criteria

Evaluation criteria in Stage 1 – Candidates' application files	Scores
1. Academic Excellence Educational Background: Quality, relevance, and grades of the academic degrees (Bachelor's and Master's or equivalent). Research Experience: Evidence of previous research experience, such as internships, Master's theses, or publications. Awards/Distinctions: Recognition of academic or professional excellence, scholarships, or other honours.	max= 40
2. Research Potential Skills and Knowledge: Alignment of the candidate's skills with the research area of the doctoral network. Relevant Experience: Hands-on experience in techniques, methodologies, or tools related to the project.	max= 20
3. Motivation and Career Plan Motivation Statement: Clarity, relevance, and originality of the candidate's statement of purpose. Alignment with MSCA Goals: How the candidate's career goals align with the MSCA training and development framework. Career Aspirations: Evidence of a clear and realistic vision for future career paths, especially in academia, industry, or related fields.	max= 20
4. International and Interdisciplinary Experience Mobility Experience: Prior international experience (e.g., studies, internships, or exchanges abroad) or plans to comply with the MSCA mobility rule. Interdisciplinary Exposure: Experience in crossing disciplinary boundaries or involvement in multidisciplinary projects. Communication Skills: Ability to express ideas clearly and concisely in written and spoken English. Teamwork and Collaboration: Evidence of working effectively in diverse or international teams.	max= 20
Rejection under 75/100 threshold. In case of equality, criteria 1 will prevail on criteria 2, then criteria 3 and then 4 and then 5.	Total= 100
Stage 2: Interview Process and Scoring	
The interview will involve a structured format, such as: - A brief self-introduction and motivation statement by the candidate. Technical questions to assess research expertise. Behavioural or situational questions to evaluate soft skills and adaptability. Innovative thinking: Ability to demonstrate creative problem-solving and innovative approaches in research	(0-10) (0-10) (0-10) (0-10)
Scoring will be on a defined scale (e. g. 0-10) for each criterion, with weightings assigned based on the Doctoral Network's priorities. In case of equality, criteria 1 will prevail on criteria 2, then criteria 3. In case of equality, the score in the 1 st stage will prevail.	

6 How to apply

Applications must be submitted before the call deadline: **5 September 2025, 23:59 CET**.

Applications must be **submitted electronically** via the ViroiDoc website form, available on www.viroidoc.eu, and must be complete and contain all mandatory attachments and supporting documents (see below).

In the application, a Doctoral Candidate may choose max two (2) Doctoral positions and associated Individual Research Project (IRP) at the CNR-IPSP in Italy:

- **DC7 in Italy:** IRP *Dissection of viroid pathogenesis through omics and phenotyping approaches at the CNR-IPSP* in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA).
- **DC8 in Italy:** IRP *Identification and characterization of novel infectious circular viroid-like RNAs in hosts belonging to different kingdoms* at the CNR-IPSP in cooperation with the Università degli Studi di Bari Aldo Moro (UNIBA-DiSSPA).

A candidate should provide the following information, including attachments:

Note: All required documents attached as a PDF file must include the specific DC code of the position that the candidate is applying to. Applications not meeting this condition will be automatically rejected. Example of PDF file name:

DC No. ViroiDoc MSCA DN Application-Family name-copy of ID.pdf

DC No. ViroiDoc MSCA DN Application-Family name-CV.pdf

- **Candidate Information** (name & surname, contact information, nationality), including attachments:
 - Copy of valid ID (passport or other) document
 - Copy of Proof of Residence (issued by an administrative unit or a similar authority)
 - CV in [Europass format](#)
- **Educational background**, including degrees obtained, institutions attended, and major fields of study (BSc and MA), including attachments:
 - **Academic transcripts of records** and diplomas **in English and certified** (A scanned copy of the original Master's degree with full transcripts. In case the Master's degree has not been obtained at the Call closing date, applicants must upload their BSc degree/diploma in English, and also upload the transcript of the exams sustained so far during their master course, with a clear indication of the conclusion of the studies).
 - **Proof of English language proficiency** (certificate at the level B2-C2 in line with the [Common European Framework of Reference for Languages - CEFR](#)).

- **Motivation letter** (as attachment, max 1000 words): explain why the candidate wishes to join the ViroiDoc Doctoral Network and how the candidate's skills and interests align with the goals of the proposed doctoral program. Describe Skills and Qualifications Assessment; relevant skills in areas like research methodologies, languages, technical expertise, etc., Master's degree evaluation, Description of prior research experience (internships, publications, conference presentations, etc.).
- **Two Reference Letters, including names and contact details of referees:** Two letters from academic or professional references attesting to the applicant's qualifications, competencies, and potential contributions to the network. Your recommenders can send reference letters separately to info@viroidoc.eu, but they must be clearly marked with your name, e.g. DC No. ViroiDoc MSCA DN Application-Family name-reference.pdf.

The candidate must also sign the declarations included in application form, available on ViroiDoc website:

- **Declaration that DC meets the MSCA eligibility criteria:** *I [candidate name] declare that I had no residence or main activity (work, studies, etc.) in the country of the recruiting beneficiary for more than 12 months in the 36 months before their recruitment date (the starting date indicated in the employment contract or equivalent direct contract).*
- **Declaration that DC has no Doctoral Degree:** *I [candidate name] declare that I do not have a doctoral degree at the time of recruitment.*

Should you require any additional information about the vacancies, please contact the coordinator of the ViroiDoc DN at info@viroidoc.eu. Applicants should check the FAQs published on the ViroiDoc website, <https://www.viroidoc.eu/people#job-vacancies>.

Institutions participating in the Network are committed to ensuring equal opportunities for all employees and students, preventing workplace discrimination and fostering a diverse and inclusive working environment. Should assistance or accommodations be required during the application and interview process, applicants are requested to contact the ViroiDoc Network.