



# Andrea Spina

## WORK EXPERIENCE

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### Postdoctoral Researcher

*Università degli Studi di Urbino "Carlo Bo", Dipartimento di Scienze Biomolecolari (DISB)* [ 16/03/2023 – Current ]

05/G1 - Pharmacology, clinical pharmacology and pharmacognosy  
Scientific-Disciplinary Sector BIO/14 - Pharmacology

### PhD Researcher

*Università degli studi "Carlo Bo" Urbino* [ 03/11/2019 – 31/01/2023 ]

City: Urbino

Country: Italy

- Research in biological pathways and cellular mechanisms of  $Ca^{2+}$  mobilization and ROS formations; focus on ERO1 and ER stress signalling

Competence:

- Cell culture ; Cell proliferation ; Microcopy ; Fluorescence assay ; cell differentiation

### Internship

*Arcispedale Sant' Anna* [ 31/03/2018 – 30/09/2018 ]

City: Ferrara

Country: Italy

Internship in endocrinology group: (applied research)

-A study about mTor Pathway, autophagy and apoptosis evasion mechanism in different Bronchial Carcinoids cell models (typical and atypical)

Competence in:

-Cell culture ; Western-Blot ; Cell proliferation ; Protein extraction

### Internship

*Istituto Maïemòndes de Investicaciòn biomedica (IMIBIC)* [ 31/01/2017 – 30/06/2017 ]

City: Cordoba

Country: Spain

Internship in group of Hormonas Y Cancer: (applied research)

- A study about physiopathological features of the deregulation in the splicing process (machinery and associated factors) in prostate cancer cell model.

Competence in:

- Cell Culture ; RNA-extraction ; RT-qPCR ; Alamar-Blue proliferation assay ; Wound-Healing migration assay ; Mini-Prep (Plasmid Purification) ; Stable transfection with plasmids ; Transitory transfection with SiRNA.

## **Internship**

**BioLab** [ 30/06/2014 – 31/10/2014 ]

City: Fano

Country: Italy

Training internship for blood, urological and faecal analyst for medical diagnosis

## **EDUCATION AND TRAINING**

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### **Doctor of Philosophy, PhD**

**Università degli studi "Carlo Bo" Urbino** [ 03/11/2019 – 24/05/2023 ]

City: Urbino

Country: Italy

Level in EQF: EQF level 8

BIOMOLECULAR AND HEALTH SCIENCES

Ricerca applicata

### **Laurea Magistrale (Doublee Degree) in Scienze Biomolecolari e dell' Evoluzione (LM-6)**

**Università degli studi di Ferrara** [ 11/09/2016 – 13/03/2019 ]

City: Ferrara

Country: Italy

Level in EQF: EQF level 7

### **Master en Biotecnologia**

**Universidad de Cordoba** [ 31/10/2016 – 17/07/2017 ]

City: Cordoba

Country: Spain

Level in EQF: EQF level 7

### **Laurea scienze biologiche (L-13)**

**Università degli studi di Urbino Carlo Bo** [ 19/09/2011 – 12/07/2015 ]

City: Urbino

Country: Italy

Level in EQF: EQF level 6

### **Perito chimico industriale capotecnico**

**I.T.I.S. E. Mattei** [ 31/08/2006 – 18/07/2011 ]

City: Urbino

Country: Italy

Level in EQF: EQF level 5

## **CERTIFICATES**

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### **Certification**

Certificate of competence / Attestato di abilitazione: Conseguimento dell' abilitazione alla professione di Biologo (Sezione A)

## Certification

CERTIFICADO DE CAPACITACION - Funciones y grupos de especies animales para los que se reconoce la capacitación (Artículo 13, Orden ECC/566/2015, de 20 marzo): eutanasia y realización de los procedimientos: Roedores, Logomorfos, Peces y Anfibios

## Certification

CORSO DI FORMAZIONE GENERALE SULLA SICUREZZA PER I LAVORATORI- Formazione sicurezza nei luoghi di lavoro ai sensi del D.LGS.81/2008 E S.M.I. (Rischio Medio)

## Certification

Speleology license 1° level

## LANGUAGE SKILLS

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Mother tongue(s): **Italian**

### Other language(s):

#### English

**LISTENING B2 READING B2 WRITING B1**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

#### Spanish

**LISTENING B2 READING B2 WRITING B1**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## DRIVING LICENCE

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Driving Licence: B

## NETWORKS AND MEMBERSHIPS

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**Member of Società Italiana di Farmacologia (SIF)**

## PROJECTS

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### PRIN 2020

**Participant in the research unit**

**Scientific coordinator:** Clementi Emilio Giuseppe Ignazio

**Scientific director:** Guidarelli Andrea

**Athenaeum/Institution:** Università degli Studi di Urbino Carlo Bo

**Protocol:** 2020ELYA32\_005

**Section:** ERC LS7

**Duration:** 36 mesi

**Project title:** Sirtuin-1 activation and antioxidant-based strategies for boosting exonskipping efficiency in Duchenne Muscular Dystrophy: combination approach and nutraceuticals in innovative pharmacotherapy

## CONFERENCES AND SEMINARS

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**ERO1 $\alpha$ -dependent Ca $^{2+}$  release from the ryanodine receptor critically regulates mitochondrial superoxide formation induced by arsenite**

[ Urbino,Italia, 05/09/2023 – 08/09/2023 ]

Andrea Spina, Andrea Guidarelli, Mara Fiorani, Ester Zito, and Orazio Cantoni

Oral Communication - XXV Conference of Young SIF (Società Italiana di Farmacologia) Pharmacologist 2023

## **L'arsenito mobilizza il Ca<sup>2+</sup> dal recettore della rianodina in modo concentrazione dipendente ed innesca due diversi meccanismi di formazione di ROS: ruolo di ERO1 $\alpha$**

[ Bologna, Italia, 20/02/2023 – 22/02/2023 ]

Andrea Spina, Andrea Guidarelli, Ester Zito, Mara Fiorani e Orazio Cantoni

POSTER - 21 National conference SITOX (Società Italiana di Tossicologia)

## **Critical role of ERO1 $\alpha$ in the regulation of Ca<sup>2+</sup>-dependent mitochondrial superoxide formation induced by arsenite**

[ Roma, Italia, 16/11/2022 – 19/11/2022 ]

Andrea Guidarelli, Andrea Spina, Ester Zito, Mara Fiorani and Orazio Cantoni

POSTER - 41 National conference SIF (Società Italiana di Farmacologia)

## **ERO1 $\alpha$ promuove la formazione di superossidi mitocondriali indotta dall'arsenito attraverso il reclutamento del recettore della rianodina ed il conseguente accumulo mitocondriale di Ca<sup>2+</sup>**

[ Bologna, Italia, 25/10/2021 – 27/10/2021 ]

Andrea Spina, Andrea Guidarelli, Ester Zito, Mara Fiorani e Orazio Cantoni

POSTER - 20 National conference SITOX (Società Italiana di Tossicologia)

## **PUBLICATIONS**

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### **ERO1 $\alpha$ primes the ryanodine receptor to respond to arsenite with concentration dependent Ca<sup>2+</sup> release sequentially triggering two different mechanisms of ROS formation**

[2023]

DOI: 10.1016/j.cbi.2023.110694

Andrea Guidarelli, Andrea Spina, Gloria Buffi, Giulia Blandino, Mara Fiorani, Orazio Cantoni

Chemico-Biological Interactions 383(2):110694

### **Arsenite enhances ERO1 $\alpha$ expression via ryanodine receptor dependent and independent mechanisms**

[2023]

DOI: 10.1016/j.etap.2023.104080

Andrea Guidarelli, Andrea Spina, Ester Zito, Mara Fiorani e Orazio Cantoni

Environmental Toxicology and Pharmacology 98:104080

### **Inhibition of activity/expression, or genetic deletion, of ERO1 $\alpha$ blunts arsenite geno- and cytotoxicity**

[2022]

DOI: 10.1016/j.fct.2022.113360

Andrea Guidarelli, Andrea Spina, Mara Fiorani, Ester Zito, Orazio Cantoni

Food and chemical toxicology 168:113360

### **Crosstalk between ERO1 $\alpha$ and ryanodine receptor in arsenite-dependent mitochondrial ROS formation**

[2022]

DOI: 10.1016/j.bcp.2022.114973

Andrea Spina, Andrea Guidarelli, Mara Fiorani Ersilia Varone, Alessia Catalani, Ester Zito, Orazio Cantoni

Biochemical Pharmacology 198(2):114973

**Functional organization of the endoplasmic reticulum dictates the susceptibility of target cells to arsenite-induced mitochondrial superoxide formation, mitochondrial dysfunction and apoptosis**

[2021]

DOI: [10.1016/j.fct.2021.112523](https://doi.org/10.1016/j.fct.2021.112523)

Andrea Guidarelli, Alessia Catalani, Andrea Spina, Ersilia Varone, Stefano Fumagalli, Ester Zito, Mara Fiorani, Orazio Cantoni

Food and chemical toxicology 156:112523

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