

Stela Virgilio

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Department of Cellular and Molecular Biology & Pathogenic Bioagents
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[Curriculum vitae online](#)

EDUCATION

- 2006 - 2010** B.S. Biotechnology, Federal University of Sao Carlos, UFSCar, Araras, SP, Brazil
- 2010 - 2012** M.S. Biotechnology, Universidade Estadual Paulista, IQ-UNESP, Araraquara, SP, Brazil
- 2012 - 2016** Ph.D. Biotechnology, Universidade Estadual Paulista, IQ-UNESP, Araraquara, SP, Brazil and Texas A&M University, College Station, TX, USA.
- 2016 - current** Postdoctoral researcher in Molecular Protozoology, University of Sao Paulo, USP, Ribeirao Preto, SP, Brazil

PROFESSIONAL EXPERIENCE

- 2015** Graduate Teaching Assistant, Molecular Biology and Biochemistry, IQ-UNESP, Brazil
- 2015 - 2016** Teacher of "Centro de Formação Profissional Profa Maria Efigênia Soares Antunes" Technical School - CFP, Brazil
- 2015 - current** Professor of Unyleya Faculty, Brazil
- 2016 - current** Postdoctoral Research Assistant, USP, Brazil

LANGUAGES

English, Spanish, Portuguese

EXPERTISE

1. Molecular Biology
2. Cell Biology
3. Environmental Biology
4. Biochemistry
5. Biotechnology
6. Parasitology
7. Protozoology
8. Microbiology
9. Microorganism
10. Genetics
11. Medicine
12. Scientific Research Methodology
13. Chemistry

HONOR, AWARDS AND FELLOWSHIPS

- 2008** AUGM scholarship to study in Universidad Nacional de Tucumán, Argentina
- 2009-2010** FAPESP undergraduate fellowship
- 2010** Scientific Initiation Painel Prize in the Microorganism Genetic field, in Brazilian Society of Genetics - 56th Brazilian Congress of Genetics
- 2010-2012** FAPESP Master fellowship
- 2012-2016** FAPESP Ph.D. fellowship
- 2014** Elsevier Microbiology Gold Poster Award, in 2014 ISFUS International Symposium on Fungal Stress, Elsevier and ISFUS
- 2015** SBBq Award for best poster, in SBBq and IUBMB
- 2015** "Profa Dra Márcia da Silva" Award for 1st among scientific papers presented orally at 5th Pharmaceutical Congress of UNESP and I Conference on Bioprocess Engineering and Biotechnology, Faculty of Pharmaceutical Sciences - UNESP
- 2015** Honor mention for 3rd in the Postgraduate / Researcher category in the PosMicro Scientific Text Contest, with a text entitled "Microbiology in biotechnological advancement", Institute of Biosciences, Letters and Exact Sciences - IBILCE - UNESP
- 2016-2019** FAPESP Postdoctoral fellowship
- 2018** 2018 Zigman Brener Award of best poster in XXXIV Annual Meeting of the Brazilian Society of Protozoology - SBPz
- 2020-current** FAPESP Post-Doctorate fellowship

PUBLICATIONS

1. BAEK, MOKRYUN*; **VIRGILIO, STELA***; LAMB, TERESA M.*; IBARRA, ONEIDA; ANDRADE, JUVANA MOREIRA; GONÇALVES, RODRIGO DUARTE; DOVZHENOK, ANDREY; LIM, SOOKKYUNG; BELL-PEDERSEN, DEBORAH; BERTOLINI, MARIA CELIA; HONG, CHRISTIAN I. Circadian clock regulation of the glycogen synthase *gsn* gene by WCC is critical for rhythmic glycogen metabolism in *Neurospora crassa*. Proceedings of the National Academy Of Sciences of the United States of America - PNAS, v.116, p.10435-10440, 2019. *equal contribution
2. **VIRGILIO, STELA**; BERTOLINI, MARIA CÉLIA. Functional diversity in the pH signaling pathway: an overview of the pathway regulation in *Neurospora crassa*. Current Genetics, v.64, p.529-534, 2018.
3. BONI, ANA CAROLINA; AMBRÓSIO, DANIELA LUZ; CUPERTINO, FERNANDA BARBOSA; MONTENEGRO-MONTERO, ALEJANDRO; **VIRGILIO, STELA**; FREITAS, FERNANDA ZANOLLI; CORROCHER, FLÁVIA ADOLFO; GONÇALVES, RODRIGO DUARTE; YANG, ALLY; WEIRAUCH, MATTHEW T.; HUGHES, TIMOTHY R.; LARRONDO, LUIS F.; BERTOLINI, MARIA CÉLIA. *Neurospora crassa* developmental control mediated by the FLB-3 transcription factor. Fungal Biology, v.122, p.570-582, 2018.
4. GOMES PASSOS SILVA, DANIELLE; DA SILVA SANTOS, SELMA; NARDELLI, SHEILA C.; MENDES, ISABELA CECÍLIA; FREIRE, ANNA CLÁUDIA GUIMARÃES; REPOLÊS, BRUNO MARÇAL; RESENDE, BRUNO CARVALHO; COSTA-SILVA, HÉLLIDA MARINA; DA SILVA, VERÔNICA SANTANA; OLIVEIRA, KARLA ANDRADE DE; OLIVEIRA, CAMILA FRANCO BATISTA; VILELA, LIZA FIGUEIREDO FELICORI; NAGEM, RONALDO ALVES PINTO; FRANCO, GLÓRIA REGINA; MACEDO, ANDREA MARA; PENA, SERGIO DANILO JUNHO; TAHARA, ERICH BIRELLI;

SALES JUNIOR, POLICARPO ADEMAR; MOREIRA, DOUGLAS SOUZA; TEIXEIRA, SANTUZA MARIA RIBEIRO; MCCULLOCH, RICHARD; **VIRGILIO, STELA**; TOSI, LUIZ RICARDO ORSINI; SCHENKMAN, SERGIO; ANDRADE, LUCIANA OLIVEIRA; MURTA, SILVANE MARIA FONSECA; MACHADO, CARLOS RENATO. The *in vivo* and *in vitro* roles of *Trypanosoma cruzi* Rad51 in the repair of DNA double strand breaks and oxidative lesions. PLoS Neglected Tropical Diseases, v.12, 2018.

5. **STELA VIRGILIO**; FERNANDA BARBOSA CUPERTINO; DANIELA LUZ AMBROSIO; MARIA CÉLIA BERTOLINI. Regulation of the reserve carbohydrate metabolism by alkaline pH and calcium in *Neurospora crassa* reveals a possible cross-regulation of both signaling pathways. BMC Genomics, v.18, 2017.

6. NATALIA E. BERNARDES; AGNES ALESSANDRA S. TAKEDA; THIAGO REVERS DREYER; FERNANDA B. CUPERTINO; **STELA VIRGILIO**; NELLY PANTE; MARIA CÉLIA BERTOLINI; MARCOS R. M. FONTES. Nuclear transport of the *Neurospora crassa* NIT-2 transcription factor is mediated by importin- α . Biochemical Journal, v.474, p.4091-4104, 2017.

7. **STELA VIRGILIO**; FERNANDA BARBOSA CUPERTINO; NATÁLIA ELISA BERNARDES; FERNANDA ZANOLLI FREITAS; AGNES ALESSANDRA SEKIJIMA TAKEDA; MARCOS ROBERTO DE MATTOS FONTES; MARIA CÉLIA BERTOLINI. Molecular Components of the *Neurospora crassa* pH Signaling Pathway and Their Regulation by pH and the PAC-3 Transcription Factor. Plos One, v.11, 2016.

8. FERNANDA ZANOLLI FREITAS; **STELA VIRGILIO**; FERNANDA BARBOSA CUPERTINO; DAVID JOHN KOWBEL; MARIANA FIORAMONTE; FABIO CESAR GOZZO; N. LOUISE GLASS; MARIA CÉLIA BERTOLINI. The SEB-1 Transcription Factor Binds to the STRE Motif in *Neurospora crassa* and Regulates a Variety of Cellular Processes Including the Stress Response and Reserve Carbohydrate Metabolism. G3: Genes, Genomes, Genetics (Bethesda), v.6, p.1327-1343, 2016.

9. FERNANDA B. CUPERTINO*; **STELA VIRGILIO***; FERNANDA Z. FREITAS; THIAGO S. CANDIDO; MARIA CÉLIA BERTOLINI. Regulation of glycogen metabolism by the CRE-1, RCO-1 and RCM-1 proteins in *Neurospora crassa*. The role of CRE-1 as the central transcriptional regulator. Fungal Genetics and Biology, v.77, p.82 - 94, 2015. *equal contribution

BOOK

1. **STELA VIRGILIO**; MARCO AURÉLIO TAKITA. Citricultura y sus enfermedades - Análisis de un Sistema de Restricción-Modificación de la bacteria *Xylella fastidiosa* causante de la CVC. Saarbrücken - Alemanha: Editorial Académica Española, 2014 p.93.

CONFERENCES (last 5 years)

1. **S. VIRGILIO**; J. A. BLACK; M. S. BASTOS; G. ALMEIDA DA SILVA; K. CROUCH; J. D. DAMASCENO; R. MCCULLOCH; L. R. TOSI. Global binding profiles of *Leishmania major* RPA1, HUS1 and γ H2A in response to replication stress In: BSP Trypanosomiasis & Leishmaniasis Seminar 2020, 2020, Granada, Spain. **Trypanosomiasis & Leishmaniasis Symposium - Advances in Basic and Applied Research**. British Society for Parasitology - BSP, 2020. p.74-75.

2. G. ALMEIDA DA SILVA; M. S. BASTOS; **S. VIRGILIO**; J. A. BLACK; K. CROUCH; J. D. DAMASCENO; R. MCCULLOCH; L. R. TOSI. *Leishmania major* ATR kinase modulates the parasite response to replication stress. In: BSP Trypanosomiasis & Leishmaniasis Seminar 2020, 2020, Granada, Spain. **Trypanosomiasis and Leishmaniasis Symposium - Advances in Basic and Applied Research**. British Society for Parasitology - BSP, 2020. p.103-104

3. OBONAGA, RICARDO; DAMASCENO, JEZIEL DENER; REIS-CUNHA, JOÃO L.; SANTOS, ELAINE V.; SILVA, GABRIEL LAMAK ALMEIDA; **VIRGILIO, STELA**; BASTOS, MATHEUS SILVA; BARTHOLOMEU, DANIELLA C.; MCCULLOCH, RICHARD; TOSI, LUIZ RICARDO ORSINI. Cell cycle checkpoint proteins HUS1 and RAD9 differentially modulate gene amplification and genome variability in *Leishmania*. In: Kinetoplastid Molecular Cell Biology, 2019, Woods Hole - MA.

Kinetoplastid Molecular Cell Biology. Woods Hole - MA - USA: Marine Biological Laboratory, 2019. p.92

4. ALMEIDA DA SILVA, GABRIEL LAMAK; BASTOS, MATHEUS SILVA; **VIRGILIO, STELA**; BLACK, J. A.; MCCULLOCH, RICHARD; TOSI, LUIZ RICARDO ORSINI. Characterization of the DNA damage response kinases ATR and ATM in *Leishmania major*. In: Kinetoplastid Molecular Cell Biology, 2019, Woods Hole - MA. **Kinetoplastid Molecular Cell Biology.** Woods Hole - MA - USA: Marine Biological Laboratory, 2019. p.198

5. ALMEIDA DA SILVA, G. L.; BASTOS, M. S.; **VIRGILIO, S.**; BLACK, J. A.; MCCULLOCH, R.; TOSI, L. R. O. Characterization of the protein kinase ataxia-telangiectasia mutated (ATM) of *Leishmania major*. In: XXXV Annual Meeting of the Brazilian Society of Protozoology/XLVI Annual Meeting on Basic Research in Chagas Disease, 2019, Caxambu-MG. **Abstracts SBPZ 2019 - Biology Protozoa and Their Vectors (PV)**, 2019. p.120

6. TOSI, L. R. O.; ALMEIDA DA SILVA, G. L.; BLACK, J. A.; **VIRGILIO, S.**; BASTOS, M. S.; OBONAGA GOMEZ, R.; DAMASCENO, J. D. Conservation and function of the ATR pathway in *Leishmania major*. In: XXXV Annual Meeting of the Brazilian Society of Protozoology/XLVI Annual Meeting on Basic Research in Chagas Disease, 2019, Caxambu-MG, Brazil. **SBPZ 2019 - RoundTable RT.01.3**, 2019.

7. **STELA VIRGILIO.** Generation of endogenous RPA1-tagging by CRISPR/Cas9 genome editing for characterization of chromatin binding profile in response to replication stress. In: 3rd Advanced School in Genetic Manipulation of Parasitic Protozoa: Recent advances in CRISPR-CAS9 genome editing, 2019, Kolkata, India. **GCRF NTD Network**, 2019.

8. ALMEIDA DA SILVA, G. L.; BASTOS, M. S.; **VIRGILIO, S.**; BLACK, J. A.; MCCULLOCH, R.; TOSI, L. R. O. The protein kinase ataxia-telangiectasia and RAD3-related (ATR) of *Leishmania major* modulates the parasite response to replication stress In: XXXV Annual Meeting of the Brazilian Society of Protozoology/XLVI Annual Meeting on Basic Research in Chagas Disease, 2019, Caxambu-MG. **Abstracts SBPZ 2019 - Oral Presentations**, 2019. p.40

9. BLACK, J. A.; **VIRGILIO, S.**; BASTOS, M. S.; ALMEIDA DA SILVA, G. L.; OBONAGA GOMEZ, R.; CROUCH, K.; DAMASCENO, J. D.; MCCULLOCH, R.; TOSI, L. R. O. Why is the *Leishmania* genome so plastic? Investigating the molecular mechanisms behind genome flexibility in the kinetoplastid parasite *Leishmania major*. In: XXXV Annual Meeting of the Brazilian Society of Protozoology/XLVI Annual Meeting on Basic Research in Chagas Disease, 2019, Caxambu-MG. **Abstracts SBPZ 2019 - Oral Presentations**, 2019. p.39

10. **VIRGILIO, STELA**; BASTOS, MATHEUS SILVA; DAMASCENO, JEZIEL DENER; MCCULLOCH, RICHARD; TOSI, LUIZ RICARDO ORSINI. Characterization of the chromatin binding profile of RPA and 9-1-1 complexes of *Leishmania major* in response to replication stress In: Molecular Parasitology Meeting MPM XXIX 2018, 2018, Woods Hole, MA. **MPM XXIX 2018.** Woods Hole: Marine Biological Laboratory, 2018. p.273

11. ALMEIDA DA SILVA, G. L.; BASTOS, M. S.; **VIRGILIO, S.**; MCCULLOCH, R.; TOSI, L. R. O. Dissecting the ATR pathway of *Leishmania major*: Characterization of an ATR kinase-deficient cell line. In: XXXIV Annual Meeting of the Brazilian Society of Protozoology/ XLV Annual Meeting on Basic Research in Chagas Disease, 2018, Caxambu-MG. **Abstracts SBPZ 2018 - Oral Presentations**, 2018. p.42

12. **VIRGILIO, S.**; BASTOS, M. S.; ALMEIDA DA SILVA, G. L.; DAMASCENO, J. D.; MCCULLOCH, R.; TOSI, L. R. O. Dissecting the ATR pathway of *Leishmania major*: characterization of chromatin binding profile of RPA1 and HUS1 in response to replication stress. In: XXXIV Annual Meeting of the Brazilian Society of Protozoology/ XLV Annual Meeting on Basic Research in Chagas Disease, 2018, Caxambu-MG. **Abstracts SBPz 2018- Biology Protozoa and Their Vectors**, 2018. p.141

13. BASTOS, M. S.; ALMEIDA DA SILVA, G. L.; **VIRGILIO, S.**; DAMASCENO, J. D.; MCCULLOCH, R.; TOSI, L. R. O. Dissecting the ATR pathway of *Leishmania major*: Use of CRISPR/Cas9 genome engineering for endogenous tagging of RPA1, 9-1-1 and ATR complexes. In: XXXIV Annual Meeting

of the Brazilian Society of Protozoology/ XLV Annual Meeting on Basic Research in Chagas Disease, 2018, Caxambu-MG. **Abstracts SBPz 2018- Biology Protozoa and Their Vectors**, 2018. p.146

14. BASTOS, MATHEUS SILVA; SILVA, GABRIEL LAMAK ALMEIDA; **VIRGILIO, STELA**; DAMASCENO, JEZIEL DENER; MCCULLOCH, RICHARD; TOSI, LUIZ RICARDO ORSINI. Dissecting the role of RPA1 in the *Leishmania major* response to DNA replication stress. In: Molecular Parasitology Meeting MPM XXIX 2018, 2018, Woods Hole, MA. **MPM XXIX 2018**. Woods Hole: Marine Biological Laboratory, 2018. p.272

15. MOKRYUN BAEK; **STELA VIRGILIO**; ANDREY DOVZHENOK; TERESA LAMB; ONEIDA IBARRA; DEBORAH BELL-PEDERSEN; MARIA CÉLIA BERTOLINI; CHRISTIAN HONG. The *Neurospora* circadian clock regulates glycogen metabolism via a combination of transcription factors. In: SRBR 2018 Society for research on biological rhythms, 2018, Amelia Island - Florida. **SRBR 2018**. Amelia Island - Florida, 2018. v.S70. p.56

16. **STELA VIRGILIO**; JEZIEL D. DAMASCENO; ELAINE V. SANTOS; LUIZ R. O. TOSI. Identification of Hus1 binding sites during normal and stressed DNA replication of *Leishmania major* In: 4th Symposium of the Center of Toxins, Immune-Response and Cell Signaling, 2017, São Paulo. **4th Symposium of the Center of Toxins, Immune-Response and Cell Signaling, "DNA metabolism and histone modifications in trypanosomatids"**. São Paulo: Instituto Butantan, 2017.

17. **VIRGILIO, S.**; DAMASCENO, J. D.; SANTOS, E. V.; TOSI, L. R. O. Identification of replication fragile sites involved in genome instability in the protozoan *Leishmania major*. In: XIII Congresso da Mutagen-Brasil, 2017, Ribeirão Preto. **Resumo XIII Congresso da Mutagen-Brasil**. 2017. p.76

18. M. BAEK; **S. VIRGILIO**; A. DOVZHENOK; T. LAMB; O. IBARRA; S. LIM; D. BELL-PEDERSEN; M.C. BERTOLINI; C.I. HONG. Interconnected network of circadian rhythms and glycogen metabolism in *Neurospora crassa*. In: 29th Fungal Genetics Conference Asilomar 17, 2017, Pacific Grove, CA. **Abstract Book**. Genetics Society of America, 2017. p.198

19. MOKRYUN BAEK; **STELA VIRGILIO**; ANDREY DOVZHENOK; ONEIDA IBARRA; SOOKKYUNG LIM; DEBORAH BELL-PEDERSEN; MARIA CÉLIA BERTOLINI; CHRISTIAN HONG. Interdisciplinary approaches for identification of circadian-controlled glycogen metabolism in *Neurospora crassa*. In: SRBR 2016, 2016, Palm Harbor, FL. **SRBR 2016 Conference Program**, 2016. p.182

20. **VIRGILIO STELA**; CUPERTINO FERNANDA BARBOSA; BERNARDES NATÁLIA ELISA; FREITAS FERNANDA ZANOLLI; TAKEDA AGNES ALESSANDRA SEKIJIMA; FONTES MARCOS ROBERTO DE MATTOS; BERTOLINI MARIA CÉLIA. Molecular components of the *Neurospora crassa* pH-signaling pathway and their regulation by pH and by the PAC-3 transcription factor. In: 13th European Conference on Fungal Genetics - ECFG13, 2016, Paris. **Abstract Book**. Paris, 2016. p.292.

21. NATALIA E. BERNARDES; **STELA VIRGILIO**; AGNES A.S. TAKEDA; MARIA CÉLIA BERTOLINI; MARCOS R. M. FONTES. Nuclear transport of the transcription factor NIT2 from *Neurospora crassa* is mediated by Imp- α . In: 16th International Conference of Biochemistry and Molecular Biology, 2016, Vancouver, BC. **Abstract Book**, 2016. p.80

22. **STELA VIRGILIO**. A conexão entre relógio biológico e o ritmo do metabolismo de glicogênio no fungo *Neurospora crassa*. Abordagens biológicas e modelagens matemáticas. In: VII Simpósio de Microbiologia, 2015, São José do Rio Preto. **VII Simpósio de Microbiologia - Microbiologia Industrial e Aplicada**, 2015.

23. AMANDA VENTURA CAMPOS ARAUJO; **STELA VIRGILIO**; MARIA CÉLIA BERTOLINI. Avaliação do fitness da linhagem mutante no fator de transcrição VOS-1 do fungo *Neurospora crassa* em diferentes condições de estresse In: V Congresso Farmacêutico da UNESP, 2015, Araraquara, SP. **Revista de Ciências Farmacêuticas Básica e Aplicada: Supl.1 CB 04**, 2015. v.36

24. **STELA VIRGILIO**; ONEIDA IBARRA; DEBORAH BELL-PEDERSEN; MARIA CÉLIA BERTOLINI. Correlação entre relógio biológico e o metabolismo de glicogênio no fungo *Neurospora crassa*: da modelagem matemática aos experimentos biológicos. In: V Congresso Farmacêutico da UNESP,

2015, Araraquara, SP. **Revista de Ciências Farmacêuticas Básica e Aplicada: Supl.1 BB 10**, 2015. v.36

25. **VIRGILIO, S.**; CUPERTINO, F. B.; BERTOLINI, MC. pH signaling pathway in *Neurospora crassa*: pal genes regulation and PAC-3 processing. In: 61º Congresso Brasileiro de Genética, 2015, Águas de Lindóia, SP. **Resumos do 61º Congresso Brasileiro de Genética**, 2015. p.36

26. **STELA VIRGILIO**; FERNANDA BARBOSA CUPERTINO; MARIA CÉLIA BERTOLINI. Reserve carbohydrate metabolism is controlled by pH signaling pathway in *Neurospora crassa*. In: 28th Fungal Genetics Conference, 2015, Pacific Grove, CA. **Fungal Genetics Reports 60 (Suppl): Abstract # 58**. Fungal Genetics Reports, 2015. p.143

27. MATEOS, P. A.; FREITAS, F. Z.; IMAMURA, K. B.; CANDIDO, T. S.; **VIRGILIO, S.**; BERTOLINI, MC. The RUV-1/2 proteins have a functional role in heat shock response in *Neurospora crassa*. In: 23rd Congress of the International Union of Biochemistry and Molecular Biology (IUBMB) and 44th Annual Meeting of the Brazilian Society for Biochemistry and Molecular Biology (SBBq), 2015, Foz do Iguaçu, PR. **Abstracts Book**, 2015. p.304

28. **VIRGILIO, S.**; IBARRA, O.; BELL-PEDERSEN, D.; BERTOLINI, MC. The transcription factor VOS-1 connects the circadian clock to rhythmic glycogen metabolism in *Neurospora crassa*. In: 23rd Congress of the International Union of Biochemistry and Molecular Biology (IUBMB) and 44th Annual Meeting of the Brazilian Society for Biochemistry and Molecular Biology (SBBq), 2015, Foz do Iguaçu, PR. **Abstracts Book**, 2015. p.294

OTHER PARTICIPATION

1. Reviewer for Scientific Journals
2. Oral presentation in several Conferences
3. Presentation or participation in Scientific Courses
4. Development of didactic or instructional material for Faculties or Universities
5. Supervisions of Scientific Works
6. Participation in the evaluation of scientific works conclusion: undergraduate, technician, Master and Ph.D. degrees
7. Participation as Poster Evaluator during some Conferences.