

Personal data

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Academic degrees

2006- Degree in Engenharia Agronómica (Agricultural sciences) by Instituto Superior de Agronomia, Universidade Técnica de Lisboa (17 values)

2012- PhD in Biochemistry, specialization in Cell Biology by Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa

Previous and current scientific and/or professional activities

- February 2006 to July 2006- Training in molecular biology applied to fruit species at Secção de Horticultura, Instituto Superior de Agronomia, Universidade Técnica de Lisboa
- January 2007 to October 2007- Research student at Disease and Stress Biology Laboratory, ITQB, Universidade Nova de Lisboa
- 10th to 23rd August 2008- Short-Term Scientific Mission sponsored by COST Office at PPFQ, Scottish Crop Research Institute, Dundee, Scotland, UK
- October 2007 until November 2012- PhD student at Disease and Stress Biology Laboratory, ITQB, Universidade Nova de Lisboa, PT
- December 2012 until the moment- Researcher at Instituto de Biologia Experimental e Tecnológica, PT

Area of scientific activity

Plant biochemistry, recovery of Portuguese endemic plants by use of their bioactive compounds in human health

Antioxidant activity of Portuguese endemic plants extracts (*Rubus* sp. and *Juniperus* sp.)

Polyphenols biosynthesis pathway

Phytochemicals metabolites after human digestion

Genome profiling of Parkinson's-induced neuroblastoma cells treated with antioxidant polyphenols

Present research interests

Revitalization of endemic plants by use of their bioactive compounds in human health

Phytochemicals

Portuguese endemic plants and berries

Polyphenolic plant extracts

Total polyphenols content

Antioxidant capacity

Polyphenols digestion

Molecular biology (transcript analysis)

Polyphenols biosynthesis pathway

Neurodegenerative diseases

Blood-brain-barrier permeability

Other skills/activities

DNA and RNA extractions (from fruit trees to animal cell cultures)

Molecular biology

Microarrays analysis

Flow cytometry

Phytochemicals *in vitro* digestion

Animal cell culture techniques

Member of collaborative network:

-COST Action 863: Euroberry Research: from Genomics to Sustainable Production, Quality & Health since 2007 to 2010

-COST Action FA1005 INFOGEST- Improving health properties of food by sharing our knowledge on the digestive process, since 2011

Publications

Thesis

1. TAVARES LR. 2006. Caracterização molecular de alelos S em pereira 'Rocha'. Relatório de final de curso de Engenharia Agronómica. ISA. Lisboa
2. TAVARES LR. 2012. Evaluation of neuroprotective potential of polyphenols derived from Portuguese native plants: *Juniperus* sp. and *Rubus* sp. ITQB. Oeiras

Papers in international scientific periodicals with referees

1. Mota M, TAVARES L, Oliveira MCM. 2007. Identification of S-alleles in pear (*Pyrus communis* L.) cv. Rocha and other European cultivars. *Scientia Horticulturae*. 113, 13-19
2. Fortalezas, S, TAVARES L, Santos C, Pimpão R, Tyagi M, Pontes V, Ferreira R. 2010. Antioxidant properties and neuroprotective capacity of strawberry tree fruit (*Arbutus unedo*). *Nutrients*. 2, 214-229
3. TAVARES, L, Fortalezas S, Carrilho C, McDougall GJ, Stewart D, Ferreira RB, Santos C. 2010. Antioxidant and antiproliferative properties of strawberry tree tissues. *Journal of Berry Research*. 1,3-12
4. TAVARES, L, Carrilho D, Tyagi M, Barata D, Serra AT, Duarte CMM, Duarte RO, Feliciano R, Bronze MR, Chicau P, Espírito-Santo MD, Ferreira RB, Santos CN. 2010. Antioxidant Capacity of Macaronesian Traditional Medicinal Plants. *Molecules*. 15(4), 2576-2596
5. TAVARES, L, Alves PM, Ferreira RB, Santos CN. 2011. Comparison of different methods for DNA-free RNA isolation from SK-N-MC neuroblastoma. *BMC Research notes*. 1(1), 140.
6. TAVARES, L, Fortalezas S, Tyagi M, Barata D, Serra AT, Duarte CMM, Duarte RO, Feliciano RP, Bronze MR, Espírito-Santo MD, Ferreira RB, Santos CN. 2012. Bioactive compounds from endemic plants of Southwest Portugal: Inhibition of acetylcholine esterase and radical scavenging activities. *Pharmaceutical Biology*. 50 (2), 239-246.
7. TAVARES, L, Figueira I, Macedo D, McDougall GJ, Leitão MC, Vieira HLA, Stewart D, Alves PM, Ferreira RB, Santos CN. 2012. Neuroprotective effect of blackberry (*Rubus* sp.) polyphenols is potentiated after simulated gastrointestinal digestion. *Food Chemistry*. 131(4), 1443-1452.
8. TAVARES, L, Figueira I, McDougall GJ, Vieira HLA, Stewart D, Alves PM, Ferreira RB, Santos CN. Neuroprotective effects of digested polyphenols from wild blackberry species. *European Journal of Nutrition* DOI:10.1007/s00394-00012-00307-00397
9. TAVARES L, McDougall GJ, Fortalezas S, Stewart D, Ferreira RB, Santos CN. The neuroprotective potential of phenolic-enriched fractions from four *Juniperus* species found in Portugal. *Food Chemistry*. 135(2), 562-70.
10. Cardoso S, Pinto P, Lima G, Pimpão R, TAVARES L, Ferreira RB, Santos CN. 2012. Assessment of Portuguese fruit and vegetable consumption by on-line semi-quantitative food frequency questionnaire (submitted)
11. TAVARES L, Pimpão RP, McDougall GJ, Stewart D, Ferreira RB, Santos CN. Understanding polyphenols production in *Juniperus* sp.: seasonality and response to stress situations (submitted)
12. TAVARES L, Gardner R, Becker JD, Ferreira RB, Santos CN. Differential expression of genes involved in neuroprotection conferred by blackberry polyphenols derived from digestion (in preparation).
13. Macedo D, TAVARES L, McDougall GJ, Stewart D, Ferreira RB, Santos CN, Outeiro TF, Tenreiro S. Polyphenol-enriched fraction of *Corema album* protects from alpha-synuclein toxicity by increasing autophagy and reducing ROS in a yeast model of Parkinson's disease (in preparation)
14. Santos CN, TAVARES L, Martins IL, Ricardo CP, Ferreira RB. Influence of cell redox state on the response of *Lemna minor* proteome to arsenite (in preparation)

Papers in conference proceedings

1. TAVARES LR, Mota M, Oliveira MC, 2009. Análise da expressão dos alelos S em pereira 'Rocha'. *Actas portuguesas de Horticultura- 1º Simpósio Nacional de Fruticultura* 12-13 Outubro de 2006, 11, pp 2-9
2. Mota, M, TAVARES L, Oliveira MCM. 2009. Identificação de alelos S em diferentes

- cultivares de pereira presentes nos pomares do Oeste e avaliação da compatibilidade gametofítica com a 'Rocha'. Actas portuguesas de Horticultura- 1º Simpósio Nacional de Fruticultura 12-13 Outubro de 2006, 11, pp 29-35
3. Mota M, TAVARES L, Oliveira CM. 2008. Identification of S-Alleles in the Pear cv. Rocha and Other European Pear Cultivars. In A.D. Webster, C.M. Oliveira, eds, Proceedings of the Xth International Pear Symposium, Vols 1 and 2. International Society Horticultural Science, Leuven 1, pp 431-437
 4. Santos C, TAVARES L, Pontes V, Oliveira P, Ferreira R. 2011. Poder antioxidante dos pequenos frutos e seus efeitos benéficos para a saúde humana. Proceedings of the III Colóquio Nacional da Produção de Pequenos Frutos. Sever do Vouga, Portugal. 26- 27 June 2008. published in "Actas Portuguesas de Horticultura" nº 18.
 5. TAVARES L, Barata D, Santos C, Carrilho D, Serra T, Feliciano R, Duarte C, Bronze R, Oliveira P, Ferreira R. 2008. Phytochemical characterization of leaf and root tissues from raspberry, including antioxidant activity evaluation. Proceedings of the XXIVth International Conference on polyphenols. Salamanca, Spain. 407-409pp;
 6. Carrilho D, TAVARES L, Barata D, Santos C, Serra T, Duarte R, Espírito-Santo D, Teixeira A, Ferreira R. 2008. Antioxidant properties and phytochemical analysis of uncharacterized Portuguese endemic aromatic herb, *Thymus capitellatus*. Proceedings of the XXIVth International Conference on polyphenols. Salamanca, Spain. 467-469pp;
 7. Santos C, Duarte D, Barata D, TAVARES L, Carrilho D, Serra T, Teixeira A, Duarte C, Alves P, Ferreira R. 2008. Phytochemical evaluation of *Quercus* species- Antioxidant properties of *Q. suber* leaves in a neurodegeneration cell model. Proceedings of the XXIVth International Conference on polyphenols. Salamanca, Spain. 789-791pp.
 8. TAVARES L, Pimpão R, Ferreira RB, Santos CN. 2010. Phenolics biosynthesis in response to stress conditions in *Juniperus* sp.. Proceedings of the XXVth International Conference on polyphenols. Montpellier, France. 261-262pp.
 9. Pimpão R, TAVARES L, Oliveira P, Ferreira R, Santos C. 2010. Antioxidant properties and nutritional quality assessment of berries produced in Portugal. Proceedings of the XXVth International Conference on polyphenols. Montpellier, France. 448-449pp.

Abstracts in international journals with referees:

1. TAVARES L, Pimpão RC, Santos C, McDougall GJ, Stewart D, Ferreira RB. 2009. Phytochemical characterization of *Juniperus* spp. leaves. 57th International Congress and Annual Meeting of the GA. August 16 – 20, Geneva, Switzerland. Planta Med 2009. 75: PA73, 923.
2. Santos C, TAVARES L, Fortalezas S, Carrilho D, Pontes V, McDougall GJ, Stewart D, Ferreira RB. 2009. Neuroprotective and MMP-9 inhibitory activity of hydroethanolic extract of *Arbustus unedo* leaves. 57th International Congress and Annual Meeting of the GA. August 16 – 20, Geneva, Switzerland. Planta Med 75: PA76,924.

Gene Bank accessions

51 sequences deposited in NCBI Gene Bank

Communications

Other oral communications

1. TAVARES LR, Mota M, Oliveira MC. 2009. Análise da expressão dos alelos S em pereira 'Rocha'. Actas portuguesas de Horticultura- 1º Simpósio Nacional de Fruticultura 12-13 October 2006, 11, 2-9;
2. TAVARES LR, Santos CN, McDougall GJ, Stewart D, Ferreira RB. 2008. Portuguese endemic wild blackberries as an alternative source of polyphenols and antioxidant activity. COST863 WG1 + WG4 Joint Meeting Bioactive compounds in berry fruits: genetic control, breeding, cultivar, analytical aspects and human health. Zurich. 3rd-5th December 2008.
3. Santos C, TAVARES L, Pontes V, Alves P, Ferreira R. 2008. Antioxidant capacity of portuguese endemic *Rubus* fruits in a neurodegeneration cell model. COST863 WG1 +WG4 Joint Meeting Bioactive compounds in berry fruits: genetic control, breeding, cultivar, analytical aspects and human health. Zurich. 3rd - 5th December 2008.
4. TAVARES LR, Santos CN, McDougall GJ, Fortalezas S, Carrilho D, Stewart D, Ferreira RB. 2009. Phytochemical profiling of different tissues from portuguese endemic *Rubus* species, COST863 Management Committee and Workshop on Defining needs of berry industries, Lisbon, 19th - 21st March 2009.
5. TAVARES L, McDougall GJ, Stewart D, Ferreira RB, Santos CN. 2010. Neuroprotective effects of serum bioavailable metabolites from *Rubus* sp.. 1st ITQB PhD Students' Meeting. Instituto de Tecnologia Química e Biológica. Oeiras. 21st to 22nd October 2010.
6. Santos C, TAVARES L, Pontes V, Oliveira P, Ferreira R. 2011. Poder antioxidante dos pequenos frutos e seus efeitos benéficos para a saúde humana. Proceedings of the III Colóquio Nacional da Produção de Pequenos Frutos. Sever do Vouga, Portugal. 26- 27 June 2008. published in "Actas Portuguesas de Horticultura" nº 18.
7. Santos CN, TAVARES L, Figueira I, Alves M, Stewart D, Pimpão R, Williamson G, Ferreira RB. 2011. Plant-derived compounds and neurodegenerative diseases. EPSO Workshop, Plant Pigments and Human Health. Gerona. Spain 24-26 May.
8. TAVARES L, Figueira I, McDougall GJ, Stewart D, Ferreira RB, Santos CN. 2012. Amoras, o segredo para um envelhecimento saudável?. IV Colóquio Nacional da Produção de Pequenos Frutos. Faro, Portugal. 20 to 21 April 2012.

Posters in conferences

1. Mota M, TAVARES L, Oliveira MCM. 2009. Identificação de alelos S em diferentes cultivares de pereira presentes nos pomares do Oeste e avaliação da compatibilidade gametofítica com a 'Rocha'. Actas portuguesas de Horticultura- 1º Simpósio Nacional de Fruticultura 12-13 Outubro de 2006, 11, 29-35;
2. Mota M, TAVARES L, Oliveira MCM. 2007. Identification of S-alleles in pear cv. 'Rocha' and other European cultivars. X International Pear Symposium. Poster PO 41.
3. Santos C, Barata D, TAVARES L, Carrilho D, Serra T, Teixeira A, Duarte C, Alves P, Ferreira R. 2008. Antioxidant activity of *Quercus suber* leaf extracts. NutriGenomics2008. Abstracts book. 69-70.
4. TAVARES L, Barata D, Santos C, Carrilho D, Serra T, Feliciano R, Duarte C, Bronze R, Oliveira P, Ferreira R. 2008. Phytochemical characterization of leaf and root tissues from raspberry, including antioxidant activity evaluation. XXIVth International Conference on Polyphenols. Polyphenols Communications 2008. 407-409.
5. Carrilho D, TAVARES L, Barata D, Santos C, Serra T, Duarte R, Duarte C, Espírito-Santo D, Teixeira A, Ferreira R. Antioxidant properties and phytochemical analysis of uncharacterized Portuguese endemic aromatic herb, *Thymus capitellatus*. XXIVth International Conference on Polyphenols. Polyphenols Communications 2008. 467-469.
6. Santos C, Duarte D, Barata D, TAVARES L, Carrilho D, Serra T, Teixeira A, Duarte C, Alves P, Ferreira R. Phytochemical evaluation of *Quercus* species- Antioxidant properties of *Q. suber* leaves in a neurodegeneration cell model. XXIVth International Conference on Polyphenols. Polyphenols Communications 2008. 789-791.
7. Fortalezas S, TAVARES L, Santos C, Pimpão R, Tyagi M, Pontes V, Ferreira R. 2009. Antioxidant properties and neuroprotective capacity of strawberry tree fruit (*Arbutus unedo*). International Conference on FoodOmics. Cesena, Italy, from 28 to 29 May. Abstract book. 61-61.

8. Pimpão R, TAVARES L, Santos C, Tyagi M, Fortalezas S, Feliciano R, Bronze R, Silva M, Várzea V, Ferreira R. 2009. Coffee production wastes are rich sources in high antioxidant phenolic compounds. International Conference on FoodOmics. Cesena, Italy, from 28 to 29 May. Abstract book. 96-96.
9. Tyagi M, TAVARES L, Santos C, Pimpão R, Fortalezas S, Feliciano R, Bronze R, Ferreira R. 2009. *Armeria rouyana*: a rich source of vitamin C for nutraceuticals. International Conference on FoodOmics. Cesena, Italy, from 28 to 29 May. Abstract book. 115-115.
10. TAVARES L, Pimpão RC, Santos C, McDougall GJ, Stewart D, Ferreira RB. 2009. Phytochemical characterization of *Juniperus* spp. leaves. 57th International Congress and Annual Meeting of the GA. August 16 – 20, Geneva, Switzerland. Planta Med 2009. 75: PA73, 923-923.
11. Santos C, TAVARES L, Fortalezas S, Carrilho D, Pontes V, McDougall GJ, Stewart D, Ferreira RB. 2009. Neuroprotective and MMP-9 inhibitory activity of hydroethanolic extract of *Arbustus unedo* leaves. 57th International Congress and Annual Meeting of the GA. August 16 – 20, Geneva, Switzerland. Planta Med 75: PA76, 924-924.
12. Santos CN, TAVARES L, Carrilho D, Tyagi M, Barata D, Serra AT, Duarte CMM, Duarte RO, Feliciano R, Bronze MR, Espirito-Santo D, Ferreira RB. 2009. Antioxidant properties of endemic plants from Macaronesia with traditional medicinal use. 2º Congresso Iberoamericano de Fitoterapia. October 8-10. Lisbon, Portugal. Abstract book P83, 132-132.
13. TAVARES L, Santos C, Fortalezas S, Carrilho D, McDougall GJ, Stewart D, Ferreira RB. 2009. Antioxidant and antiproliferative properties of strawberry tree tissues. 4th International Conference on Polyphenols and Health. December 7-11. Harrogate, UK. Abstract book. P39, 185-185.
14. Santos C, TAVARES L, Pontes V, Alves P, McDougall GJ, Stewart D, Ferreira RB. 2009. Portuguese crowberry (*Corema album*), an interesting antioxidant white berry. 4th International Conference on Polyphenols and Health. December 7-11. Harrogate, UK. Abstract book. P40, 186-186.
15. Pimpão RC, Santos CN, TAVARES L, Carrilho D, Tyagi M, Barata D, Serra AT, Duarte CMM, Duarte RO, Feliciano R, Bronze MR, Ferreira RB, Espirito-Santo D. 2009. Medicinal plants endemic from Macaronesia: polyphenolic profile and its antioxidant properties. 4th International Conference on Polyphenols and Health. December 7-11. Harrogate, UK. Abstract book. P303, 333-333.
16. Santos C, TAVARES L, Tyagi M, Fortalezas S, Ferreira R, Santos CN. 2010. Phytochemical antioxidant capacity of leaves from *Quercus* sp. growing in Portugal, CIÊNCIA 2010 - Encontro com a Ciência em Portugal. Lisboa, Portugal. from 4 to 7 July.
17. Cardoso S, Pimpão R, Fortalezas S, TAVARES L, Alves M, Pinto P, Ferreira R, Santos CN. 2010. Development of a semi-quantitative food frequency questionnaire to assess Portugal consumption on berries, other fruits and vegetables. 28th International Horticultural Congress. Lisboa, Portugal. from 22 to 26 August.
18. Santos CN, TAVARES L, Tyagi M, McDougall GJ, Stewart D, Ferreira RB. 2010. Characterization of bioactive compounds from Portuguese endemic blackberries. 28th International Horticultural Congress. Lisboa, Portugal. from 22 to 26 August.
19. TAVARES L, Pimpão R, Ferreira RB, Santos CN. 2010. Phenolics biosynthesis in response to stress conditions in *Juniperus* sp.. Proceedings of the XXVth International Conference on polyphenols. Montpellier, France. 261-262.
20. Pimpão R, TAVARES L, Oliveira P, Ferreira R, Santos C. 2010. Antioxidant properties and nutritional quality assessment of berries produced in Portugal. Proceedings of the XXVth International Conference on polyphenols. Montpellier, France. 448-449.
21. TAVARES L, Figueira I, Macedo D, McDougall GJ, Leitão MC, Vieira HLA, Stewart D, Alves PM, Ferreira RB, Santos CN. 2011. Neuroprotective effect of blackberry (*Rubus* sp.) polyphenols is potentiated after simulated gastrointestinal digestion. 5th International Conference on Polyphenols and Health. Sitges, Spain, from 17 to 20 October.
22. TAVARES L, Figueira I, McDougall GJ, Vieira HLA, Stewart D, Alves PM, Ferreira RB, Santos CN. 2011. Neuroprotective effects of digested-derived polyphenols from wild Portuguese *Rubus* sp.. 5th International Conference on Polyphenols and Health. Sitges, Spain. from 17 to 20 October.
23. TAVARES L, Figueira I, McDougall GJ, Stewart D, Ferreira RB, Santos CN. 2011.

Health benefit effect of berries polyphenols after simulated gastrointestinal digestion. 2nd Management Committee & Working Group Meetings of COST ACTION FA1005. Le Croisic, France. from 19 to 21 October.

24. TAVARES L, Figueira I, McDougall GJ, Vieira HLA, Stewart D, Ferreira RB, Santos CN. 2012. Blackberry metabolites exhibit higher neuroprotective activity after gastrointestinal digestion. 1st International Conference on Food Digestion. Cesena, Italy. From 19 to 21 March.
25. Gomes A, Alves M, TAVARES L, McDougall GJ, Stewart D, Ferreira RB, Santos CN. 2012. The effect of blackberries in the protein pattern of human cells. IV Colóquio Nacional da Produção de Pequenos Frutos. Faro, Portugal. 20 to 21 April 2012.

Prizes and awards

Year	Prize/Award	Name of the granting entity
2002	Merit scholarship	Universidade Técnica de Lisboa
2003	Merit scholarship	Universidade Técnica de Lisboa
2004	Merit scholarship	Universidade Técnica de Lisboa
2005	Merit scholarship	Universidade Técnica de Lisboa
2007	Engineer António de Almeida Award	Engineer António de Almeida Foundation
2007	Best students of Universidade Técnica de Lisboa/ Santander Totta	Santander Totta Bank
2012	2 nd Honorable mention Nutrition Awards	Associação Portuguesa dos Nutricionistas and GCI