

20 December 2016

Ricardo Manuel de Seixas Boavida Ferreira.

Research Group: Plants for Health and Nutrition

CV synopsis:

Professional position: Full Professor at the Instituto Superior de Agronomia from the University of Lisbon

Personal: born 1957, married, 6 children.

Motto: basic research to solve everyday problems.

Research interests: with a very wide range of collaborations, strong multidisciplinary research allowing to take research from the lab bench to plate, clinic or farm.

Research areas: transcript-, proteo- and metabolomics in cell-cell and cell-molecule interactions, involved in plant- and human-pathogen interactions and human health and nutrition.

Biological materials: from bacteria to fungi, plants to man, with a special focus on fungal pathogens.

Collaborations: national and international, ranging from plant systematics, chemistry and electronics, to phytopathology, agriculture, human nutrition and medicine.

Main research topics: bioactive proteins and secondary metabolites with antifungal, bactericide, anti-inflammatory and anticancer activities; development of control strategies for extremely important plant diseases for which no cure or treatment exist (e.g. esca of grapevine, *Phytophthora* of cork oak and chest nut trees).

Publications and Patents: over 120 published scientific articles (JCR), inventor in many international patents, either granted (over 40 international patents) or under examination (8 patent families).

Supervision experience: supervision of many final-year undergraduates (>50), Master of Science (>30) and Ph.D. students (17), as well as other post-graduates (>50) and post-doctorates (>15), from both Portugal and abroad (Italy, Netherlands, France, Egypt, India, China, Russia, Bosnia, Spain, Brazil, Hungary, Germany, Angola).

Large experience on coordination of research projects and intellectual property issues.

Links to:

Homepage:

<https://fenix.isa.ulisboa.pt/qubEdu/homepage/isa2312>

Curriculum vitae:

<https://fenix.isa.ulisboa.pt/qubEdu/homepage/isa2312/topo/link-para-o-curriculum-vitae>

Ricardo Manuel de Seixas Boavida Ferreira, Ph.D.
Professor, Department of Natural Resources, Environment, and Land
School of Agriculture, University of Lisbon
Tapada da Ajuda 1349-017 Lisboa
Portugal



CURRICULUM VITAE

Name: RICARDO MANUEL DE SEIXAS BOAVIDA FERREIRA

Born in: Almeirim (Portugal)

Date of Birth: 11 March 1957

Home address: R. Professor Reinaldo dos Santos, nº 12, 2º D, 1500-505 Lisboa, Portugal; tel. 351.309934614

Institutional address: Instituto Superior de Agronomia, Universidade de Lisboa, 1349-017 Lisboa, Portugal; tel: 351.213653416; fax: 351.213653238; e-mail: rbferreira@isa.ulisboa.pt

Academic Career:

Graduate in Agronomy (Technical University of Lisbon), in 1981

Master of Science in Plant Productivity (Technical University of Lisbon), in 1983

Ph.D. in Biochemistry (University of East Anglia, U.K.), in 1987

Agregação (Technical University of Lisbon), in 1994

Professional Category:

Full Professor at the Instituto Superior de Agronomia, University of Lisbon, Portugal; phone 351.213653416; fax 351.213635031; E-mail rbferreira@isa.ulisboa.pt

Main Research Area: Biochemistry & Molecular Biology

Major areas of research, each of which includes both basic and applied lines of research:

- Strategies to improve human nutrition, and human and plant disease

- Search for natural peptides, proteins and secondary metabolites exhibiting bioactivity at the level of inflammation, cancer and nutrition - Animal models (weaned piglets and man).
- Assessment of the effect of digestion on the bioavailability of ingested, natural bioactive peptides, proteins and secondary metabolites – Animal models (rats) and human intervention studies.
- Transcriptomic, proteomic, glycomic & metabolomic analyses of the interaction host/pathogenic fungi; major fungi under study: the human pathogens *Aspergillus fumigatus* and *Alternaria alternata*, and the fungi responsible for the esca disease of grapevine;
- Lectins, exoglycome and cancer;
- Action mechanisms of plant antifungal polypeptide;
- Search & development of novel and non-toxic fungicides, active against human, animal and plant pathogens; special focus on multi-drug resistant (MDR) bacteria and the following plant pathogens: the esca causing fungi in grapevine, *Phytophthora cinamommi* in cork oak, and *Xylella fastidiosa* in olive tree and grapevine

- Stereochemical studies on dirigent protein function;
- Differential approaches for the recombinant expression of non-natural polypeptides by bacterial, yeast and plant cells to develop methods for human and plant disease control;
- Development of specific bioelectronic methodologies capable of detecting and treating grapevine plants infected with esca and other recalcitrant wood disease-causing fungi.

- The wine proteins

- Elucidation of the chemical mechanism(s) responsible for wine protein haze formation;
- Structural identification of the X factor(s).

Supervision experience

Supervision of many final-year undergraduates (>50), Master of Science (>20) and Ph.D. students (>15), as well as other post-graduates (>30) and post-doctorates (>15), from both Portugal and abroad (Italy, Netherlands, France, Egypt, India, China, Russia, Bosnia, Spain, Brazil, Hungary, Germany, Angola).

Supervision of Ph.D. students:

- 1- **Paula Cristina Rodrigues dos Ramos** (1995) "Via proteolítica dependente da ubiquitina. Aspectos particulares em sistemas vegetais". Biochemistry, Faculty of Sciences, University of Lisbon, Lisbon. FCT grant ref. BD/1045/90-IF
- 2- **Maria da Glória Calado Inglês Esquível** (1995) "Degradação da proteína total e da RuBP carboxilase em plantas C3 e C4 em condições normais e de stresse". Agronomic Engineering, Technical University of Lisbon, Lisbon. Assistant at the Technical University of Lisbon, Lisbon. In collaboration with Artur Teixeira, Technical University of Lisbon, Lisbon.
- 3- **Emanuel Franco** (1996) "Agregados de proteínas vegetais. Referências particulares à ribulose bisfosfato carboxilase e às globulinas de leguminosas". Agronomic Engineering, Technical University of Lisboa, Lisbon. FCT grant ref. BD/1694/91-IF
- 4- **Paulo Alexandre Cortes Salgado** (2001) "Digestion des protéines de légumineuses et réponses immunitaires chez le porcelet et le porc en croissance". FCT grant ref. PRAXIS XXI/ In collaboration with Jean-Paul Lallès (INRA, França) and João Bengala Freire.
- 5- **Sara Alexandra Valadas da Silva Monteiro** (2001) "Análise molecular das proteínas responsáveis pela turvação dos vinhos". Agronomic Engineering, Technical University of Lisboa, Lisbon. FCT grant ref. PRAXIS XXI/
- 6- **Maria Cláudia Godinho Ferreira Dias Nunes dos Santos** (2006) "Diferentes aspectos da proteólise em plantas: A via da ubiquitina/proteassoma e o catabolismo das proteínas de reserva de sementes de leguminosas". Biochemistry, Faculty of Sciences, University of Lisbon, Lisbon. FCT grant ref. PRAXIS XXI/BD/5699/95.
- 7- **Cristina Maria Mendes Branco Price** (2008) "Gene expression in response to hypoxia stress in *Arabidopsis thaliana*: transcriptional, translational and post-translational regulation". ITQB, New University of Lisbon, Oeiras. FCT grant ref. SFRH/BD/9165/2002. In collaboration with Professor Julia Bailey-Serres (University of Califórnia, USA).
- 8- **Ana Cristina Ferreira da Conceição Ribeiro** (2009) "Análise molecular de lectinas em sementes de leguminosas". Bromatology, Faculty of Pharmacy, University of Lisbon, Lisbon. Assistant at the University of Lisbon, Lisbon.
- 9- **Joana Arroz Correia Albuquerque** (2009) "Caracterização da subtilisina relacionada com a degradação da ribulose bisfosfato carboxilase de plantas". Agronomic Engineering, Technical University of Lisboa, Lisbon. FCT grant ref. SFRH/BD/8974/2002.
- 10- **Regina Maria Fonseca da Luz Freitas** (2009) "Expression of protein biologic activity. Different strategies in a space/time referential". Biochemistry, ITQB, New University of Lisbon, Oeiras. FCT grant ref. SFRH/BD/17115/2004.
- 11- **Lucélia Rodrigues Tavares** (2012) "Evaluation of neuroprotective potential of polyphenols derived from Portuguese native plants: *Juniperus* sp. and *Rubus* sp.". Biochemistry, ITQB, New University of Lisbon, Oeiras. FCT grant ref. SFRH/BD/37382/2007. In collaboration with Cláudia Nunes dos Santos (ITQB, UNL).
- 12- **Paula Cristina Branco Cabrita Cunha** (2014) "*Listeria monocytogenes* interstrain comparative exoproteome analyses at different temperatures". Engenharia Alimentar, ISA, Universidade de Lisboa. FCT grant ref. SFRH/BD/28164/2006. In collaboration with Maria Luísa de Castro e Brito and Maria João Almeida Pessoa Trigo (INIAV).
- 13- **Rui Carlos Soares Pimpão** (2014) "Exploring the bioavailability of (poly)phenols from berries and their potential activities in humans". Bioquímica, ITQB, New University of Lisbon. FCT grant ref. SFRH/BD/63615/2009. In collaboration with Gary Williamson (University of Leeds, UK) and Maria Cláudia Nunes dos Santos (ITQB, UNL).
- 14- **Alexandre Filipe Guerreiro Borges** (2014) "The grapevine defence. Walking towards the "hidden" role of dirigent proteins in *Vitis vinifera* secondary metabolism". FCT grant ref. SFRH/BD/61903/2009. In collaboration with Sara Monteiro and Ana Lourenço (FCT-UNL).
- 15- **Ricardo Alexandre Ventura das Chagas** (2017) "Protein haze formation in white wines. From mechanism to resolution". FCT grant ref. SFRH/BD/84749/2012. In collaboration with Luísa Ferreira (FCT-UNL).

- 16 - Ana Margarida da Silva Pinheiro** (2018) “ Bridging the gap to nontoxic fungal control”. FCT grant ref. SFRH/BD/87561/2012. In collaboration with Sara Monteiro (CEV/CONVERDE).
- 17- Giovanni del Frari** (2019) “Frontiers in the control of pathogenic fungi associated with the esca disease complex“. Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN), MicroWine, Microbial metagenomics and the modern wine industry, Grant agreement no. 643063. In collaboration with Helena Oliveira
- 18- Joana Patrícia Mota Guerreiro.** (2023) “Deflamin, an edible anti-inflammatory and anticancer protein isolated from legume seeds“. FCT grant ref. SFRH/BD/132832/2017. In collaboration with Ana Lima e Anabela Raymundo.

Currently involved in the supervision of the following Ph.D. students:

- 1- **Christine da Silva Macedo.** Em colaboração com Anabela Raymundo e Isabel Sousa.
- 2- **Manuel Joaquim Fonseca Trindade.** FCT grant ref. 2021.05409.BD. Co-orientadoras: Isabel Maria Castro e Helena Machado.
- 3- **Alcides Morais Satuala Lofa.** Bolsa de doutoramento do governo Angolano. Co-orientadora: Isabel Sousa.

Supervision of post-doctorates:

- 1- **Maria Antonieta Piçarra Pereira** (1995-2008) Professora Adjunta do Instituto Politécnico de Castelo Branco
- 2- **Michèle Ridolfi** (1996/1997) In collaboration with Manuela Chaves
- 3- **Maria da Glória Calado Inglês Esquível** (1995 a 2001) Auxiliar Professor, Technical University of Lisbon
- 4- **Dmitri Semenovitch Valiushok** (1998 a 2000) FCT grant ref. PRAXIS XXI/BPD/14175/97
- 5- **Tulassi Rajasekhar Baru** (1999 a 2001) FCT grant ref. PRAXIS XXI/BPD/16398/98
- 6- **Sara Alexandra Valadas da Silva Monteiro** (2001-2008) FCT grant ref. SFRH/BPD/5712/2001
- 7- **Sam Cherian** (2002-2005) FCT grant ref. SFRH/BPD/9053/2002
- 8- **Chen Zhenjia** (2003-2006) FCT grant ref. SFRH/BPD/12799/2003
- 9- **Maria Cláudia Godinho Ferreira Dias Nunes dos Santos** (2006-2008) FCT grant ref. SFRH/BPD/26562/2006
- 10- **Alexandra Manuela Lourenço Carreira** (2006-2008) SFRH/BPD/26544/2005
- 11- **Dina Maria Pareira Carrilho** (2006- 2009)
- 12- **Jorge Fernandes Anjos** (2008-2010) FCT grant ref. SFRH/BPD. Em colaboração com Virgílio Loureiro
- 13- **José António Melo da Costa Nunes** (2009-2011) FCT grant ref. SFRH/BPD/30365/2006
- 14- **Damiano Vesentini** (2006-2011) FCT grant ref. SFRH/BPD/26564/2005. In collaboration with Helena Oliveira
- 15- **Marta Alexandra Marques Alves** (201-2013) FCT Grant ref. SFRH/BPD/76646/2011. In collaboration with Cláudia Santos and Derek Stewart
- 16- **Juliana Cabral Oliveira** (2013-2015) Acção PRODER, Cooperação para a inovação, nº 46196
- 17- **Regina Maria Fonseca da Luz Freitas** (2010-2016) FCT grant ref. SFRH/BPD/66235/2009. In collaboration with Sara Monteiro

Currently involved in the supervision of the following post-doctorates:

- 1- **Ana Cristina Ferreira da Conceição Ribeiro** (2009-)
- 2- **Ana Isabel Gusmão Lima** (2012-) FCT Grant ref. SFRH/BPD/79955/2011.
- 3- **João Carlos Fernandes** (2017-) FCT Grant ref. SFRH/BPD/123393/2016. In collaboration with Norma Possa Marroni (ULBRA, Brasil) e Ana Lima
- 4- **Paula Batista Santos** (2018-
- 5- **Giovanni Del Frari** (2018-2022)

Participation in research projects:

Coordination and execution of many research projects, both national and international, public, private or in collaboration with private companies.

Instituto Nacional de Investigação Científica (INIC):

- CBAA (1981-1987)
- CTQB (1989-1992)
- CBAA (1987-1995)

Junta Nacional de Investigação Científica e Tecnológica (JNICT):

- PMCT/C/BIO/206/87 (1988-1990)
- PMCT/C/AGR/153/87 (1988-1990)
- 0084/E/91 (1991-1992)
- PMCT/C/BIO/876/90 (1990-1993)
- PMCT/C/BIO/886/90 (1990-1993) - PI
- STRD/AGR/0023 (1993-1995)

EDP (private company)

-Fund for Plant Biodiversity (2010-2011)

Fundação para a Ciência e a Tecnologia (FCT):

- ITQB (1989-2015)
- CBAA (1995-2014)
- LEAF (2016 to present)
- PRAXIS/2/2.1/QUI/350/94 (1997-2000) - PI
- PRAXIS/2/2.1/BIA/327/94 (1997-2000)
- PRAXIS/3/3.2/CA/2093/95 (1997-2000)
- PRAXIS/3/3.2/HORT/2140/95 (1997-2000) - PI
- PRAXIS/3/3.2/AGR/2180/95 (1997-2000)
- PRAXIS/PCNA/C/BIA/107/96 (1997-1999)
- PRAXIS/P/AGR/11058/1998 (1999-2001) - PI
- POCTI/AGR/36133/2000 (2000-2003)
- REEQ/122/AGR/2005 (2005-2006) - PI
- PTDC/BIA-QOR/68211/2006 (2008-2011) - PI
- PTDC/AGR-AAM/65611/2006 (2008-2011) - PI
- PTDC/AGR-PRO/112340/2009 (2010-2014)
- PTDC/BIA-BCM/111617/2009 (2011-2014) - PI
- PTDC/ASPSIL/29776/2017 (2018-2021) - PI
- PTDC/BAA-AGR/28608/2017 (2018-2021) - Co-PI
- PTDC/BAA-AGR/28370/2017 (2018-2021)
- PTDC/ASP-PLA/28350/2017 (2018-2021)
- PTDC/OCE-ETA/4836/2021 (2022-2024) - PI

LEAF

- LEAF Exploratory Project (2022) _ Trans-LuPig – Co-PI
- LEAF Exploratory Project (2022) _ VinumVitaVitis - PI

Agência de Inovação, SA (AdI):

- RESOÍDIO (2002-2006) - PI
- KITPROT (2002-2006) - PI
- ROSAOÍDIO (2006-2008) - PI
- NEOTEC - PROBLAD (2006-2008) - PI
- QREN TOM.ESCA (2009-2012) - PI
- QREN CEV/CONVERDE
- QREN MultiDisCO, projecto nº 30236 (2013-2015)

European Union (EU):

- CT920865 (1994-1996)
- PL920248 (1992-1996)
- Participant, The sustainable improvement of European berry production, quality and nutritional value in a changing environment: Strawberries, Currants, Blackberries, Blueberries and Raspberries (Acronym: EUBerry; EU FP7 KBBE-2010-4265942), Biotechnologies, Agriculture, Food, Seventh Framework Programme, Total € 4,047,507.91, EC contribution € 2,999,999.00, 2011-2014, URL: <http://www.euberry.univpm.it/>
- National coordinator, Microbial metagenomics and the modern wine industry (Acronym: MICROWINE; MSCA-ITN-2014-ETN, Grant agreement number: 643063), Marie Skłodowska-Curie Innovative Training Network (ITN-ETN), EU contribution: € 255,374.28, 2015-2018, URL: <https://www.microwine.eu/>
- Participant, *Lupinus mutabilis* for Increased Biomass from marginal lands and value for BIOrefineries (Acronym: LIBBIO; Horizon 2020 / BBI-JU, Type of action: BBI-RIA, Grant agreement number: 720726), EU contribution: € 4,923,750.00, 1st October 2016 - 30th September 2020, URL: www.libbio.net/
- National coordinator, Natural fungicides against air & soil borne pathogens in the Atlantic area (Acronym: NASPA; Code no. EAPA_451/2016), Total € 2,994,000.00, EC contribution € 2,245,500.00, 2nd March 2017 – 2nd February 2020
- Participant, Supplementing piglet feed with the metalloproteinase inhibitor deflamin-containing lupin extract as a model for health and physiology: a proteomics approach (Acronym: LuPig; European Proteomics Infrastructure Consortium (EPIC-XS), European Commission, Project EPIC-XS-411), EU contribution: € 50,000, 2022.

PRODER

- Acção PRODER, Cooperação para a inovação, Pedido de Apoio 46196, Operação nº 020468046196 (2012-2014) - PI
- Acção PRODER, Cooperação para a inovação, Pedido de Apoio 54740, Parceria 555, (2014-2017) - PI

PDR2020

- Grupo Operacional: Phytophthora (2016 -) - PI

Awards:

- The project “Portuguese wild blackberries: a promise as functional food for the brain”, by ITQB researchers Lucélia Tavares, Cláudia Nunes dos Santos e Ricardo Boavida Ferreira from the Disease and Stress Biology lab, received a Nutrition Awards honorable mention, category “Research and Development” - Fundação Calouste Gulbenkian, Lisbon, October 2012.
- The prize ‘Prémio Portugal PME’, Start-Up Award, was awarded to CONVERDE on 24 October 2013.
- The project TOM.ESCA received the ‘Prémio do Concurso Nacional de Inovação BES’, category “Natural resources”, 29 November 2013.
- Born from Knowledge - BfK Awards, Food & Nutrition Awards, 2018, a R&D prize attributed to the project “Deflamina, uma proteína anti-inflamatória do tremçoço” from ‘Food & Nutrition Awards’ & ‘Agência Nacional de Inovação’, October 2018.
- Prémio Científico Universidade de Lisboa / Caixa Geral de Depósitos, Área Científica de Agronomia, edição de 2020, julho de 2021.
- 2021-11-27 _ Troféu ‘85 anos da Ordem dos Engenheiros’ atribuído pelo Colégio de Engenharia Agronómica da Ordem dos Engenheiros na Gala OE 85 Anos pela descoberta da Blad.
- Ferreira, Ricardo Boavida (2022) Bioengenharias: Blad, deflamina e RuBisCO. *In*: Engenharia XXI, pp. 312-313. Ordem dos Engenheiros, Lisboa.

PUBLICATIONS:

In International Books:

- **Davies, D.D. and Ferreira, R.B.** (1987) Protein turnover under conditions of osmotic stress. *In*: "Drought resistance in plants: physiological and genetic aspects" (pp. 215-232). Monti, L. e Porceddu, E., eds. Agriculture series. Comissão das Comunidades Europeias (EUR 10700 EN), Luxemburgo.
- **Ferreira, R.M.B. and Teixeira, A.R.N.** (1993) Metabolism of amino acids. *In*: "Encyclopaedia of Food Science, Food Technology and Nutrition", (R. Macrae, R.K. Robinson e M.J. Sadler, eds.), vol. 1, pp. 158-166. Academic Press, London.
- **Teixeira, A.R.N. and Ferreira, R.M.B.** (1993) Ripening of fruits. *In*: "Encyclopaedia of Food Science, Food Technology and Nutrition", (R. Macrae, R.K. Robinson e M.J. Sadler, eds.), vol. 6, pp. 3933-3940. Academic Press, London.
- **Ferreira, R.M.B. and Teixeira, A.R.N.** (2003) Amino acids (c) Metabolism. *In*: "Encyclopedia of Food Sciences and Nutrition", (B. Caballero, L. Trugo and P. Finglas, eds.), Academic Press, London.
- **Teixeira, A.R.N. and Ferreira, R.M.B.** (2003). Ripening of fruit. *In*: "Encyclopedia of Food Sciences and Nutrition", (B. Caballero, L. Trugo and P. Finglas, eds.), Academic Press, London.
- **Ferreira, R.B.** (1993-2004) Editor of the area of Biochemistry and author of hundreds of entries. Enciclopédia Luso-Brasileira de Cultura, 2nd Edition, Editorial Verbo, Lisboa.
- **Monteiro, S., Batista, L., Loureiro, V., Teixeira, A. and Ferreira, R.B.** (2007) Major characteristics of wine proteins. *In*: Macromolecules and secondary metabolites of grapevine and wine, (P. Jeandet, C. Clément and A. Conreux), pp. 153-158. Lavoisier, Paris.
- **Ferreira, R.B., Monteiro, S., Freitas, R., Santos, C.N., Chen, Z., Batista, L.M., Duarte, J., Borges, A. and Teixeira, A.R.** (2008) Plant/fungal interactions studied at the molecular level. *In*: Plant pathology concepts and laboratory exercises. 2nd Edition. Chapter 28, pp. 309-322. R.N. Trigiano, M.T. Windham, and A.S. Windham, Eds. CRC Press, Boca Raton.
- **Monteiro, S. and Ferreira, R.B.** (2008) Testing Blad, a potent antifungal protein. *In*: Plant pathology concepts and laboratory exercises. 2nd Edition. Chapter 29, pp. 323-328. R.N. Trigiano, M.T. Windham, and A.S. Windham, Eds. CRC Press, Boca Raton.
- **Loureiro V, Ferreira MM, Monteiro S and Ferreira RB** (2012) The Microbial Community of Grape Berry. *In*: The Biochemistry of the Grape Berry, Gerós H, Chaves MM and Delrot S (Eds.), Chapter 12, pp. 241-268. Bentham Science Publishers.
- **Ferreira, RMSB, Monteiro SAVS** (2017) Plant–Fungal Interactions at the Molecular Level. The Biological Approach to Fungal Pathogen Control, pp. . *In*: Plant Pathology Concepts and Laboratory Exercises, 3rd Edition. Chapter 24, pp. 381-400. O.H. Ownley, and R.N. Trigiano, Eds. CRC Press, Boca Raton. URL: <https://www.crcpress.com/Plant-Pathology-Concepts-and-Laboratory-Exercises-Third-Edition/Ownley-Trigiano/p/book/9781466500815>
- **Ribeiro ACS, Ferreira R, Freitas R** (2018) Plant lectins: Bioactivities and bioapplications. *In*: Studies in Natural Products Chemistry, vol. 58, chapter 1, pp. 1-42. Atta-ur-Rahman, ed. Elsevier: Amsterdam. ISBN: 978-0-444-64056-7

In National Scientific Journals:

- **Ferreira, R.M. and Teixeira, A.R.** (1985) Some physical and catalytic properties of glutamate synthase from maize roots. *Ciência Biológica* (Portugal), **10** : 15-30.
- **Ferreira, R.M. and Teixeira, A.R.** (1987) Studies on glutamate synthase from the roots of maize. Effects of nicotinamide-adenine dinucleotides and inorganic salts on its activity. *Anais do Instituto Superior de Agronomia*, **42** : 231-247.
- **Ferreira, R.M.B.** (1987) Aspectos bioquímicos da degradação celular de proteínas. *Anais do Instituto Superior de Agronomia*, **42** : 267-297.
- **Franco, E., Ferreira, R.B. and Teixeira, A.N.** (1989) Effect of nitrogen source and protein synthesis inhibitors on glutamate dehydrogenase activity from *Lemna minor*. *Ciência Biológica (Mol. Cell. Biol.)* (Portugal), **14** : 59-70.
- **Monteiro, S., Piçarra-Pereira, M.A., Tanganho, M., Loureiro, V., Teixeira, A. and Ferreira, R.B.** (1998) Study of wine proteins by immunological methods. I- Production of highly specific antibodies. *Polish Journal of Food and Nutrition Sciences*, vol. **7/48**, n.º 2 (S) : 101-106.
- **Piçarra-Pereira, M.A., Monteiro, S., Loureiro, V., Teixeira, A. and Ferreira, R.B.** (1998) Study of wine proteins by immunological methods. II- Evidence for structural dissimilarity with chitinase and thaumatin. *Polish Journal of Food and Nutrition Sciences*, vol. **7/48**, n.º 2 (S) : 107-111.
- **Esquível, M.G., Ferreira, R.B. and Teixeira, A.R.** (1999) Development of a new method for determination of the rates of RuBP carboxylase degradation. *Agronomia Lusitana*, **47** : 351-357.
- **Ferreira, R.B.** (1999) The ubiquitin system for protein modification and degradation. *Agronomia Lusitana*, **47** : 287-315.
- **Ferreira, R.B., Monteiro, S., Batista, L., Loureiro, V. and Teixeira, A.** (2008) Micoses da vinha e instabilidade proteica de vinhos. *Enologia*, **51/52** : 11-23.
- **Ferreira, R.B.** (2008) Fungos patogénicos das plantas. A batalha química para a patogénese. *Agros*, **MMVIII(2)** : 4-13.
- **Santos, C.N., Tavares, L., Pontes, V., Oliveira, P. and Ferreira, R.B.** (2011) Poder antioxidante dos pequenos frutos e seus efeitos benéficos para a saúde humana. *Revista da Associação Portuguesa de Horticultura*, **104**: 26-29.
- **Ferreira, R.B., Monteiro, S.** (2012) Tanino polimerase – Apenas mais um exemplo da necessidade de entendimento entre investigadores e empresários para a resolução de problemas da nossa sociedade. *Enovitis*, **29** : 32-35.
- **Tavares L, Ferreira RB, Nunes dos Santos C** (2013) Abordagem fisiológica no estudo do impacto dos polifenóis na saúde humana: o caso das amoras silvestres portuguesas. *Revista Nutricias* (Associação Portuguesa dos Nutricionistas) **16** : 16-18.

- Jardim, C., Macedo, D., Figueira, I., Menezes, R., Tenreiro, S., Outeiro, T.F., Ferreira, R.B., Santos, C.N. (2014) Medronho: um fruto com efeitos benéficos nas doenças degenerativas. *AGROTEC* **12** : 62-65.
- Branco AC, Martins MM, Ribeiro AC, Ferreira RB, Santo DE (2016) Composição mineral, propriedades antioxidantes e análise de lectinas de: *Rumex crispus* L., *Sinapis arvensis* L. *Beta maritima* L. *Sonchus oleraceus* L. *Agros*, **MMXVI(1)** : 20-31.
- Ferreira RB (2017) A Ciência ao serviço da sociedade. Dois exemplos. *ENOLOGIA* **65** : 12-19.

In International Scientific Journals (154):

- Ferreira, R.B. and Davies, D.D. (1986) Is protein degradation correlated with either the charge or size of *Lemna* proteins? *Planta*, **169** : 278-288. doi: [10.1007/BF00392326](https://doi.org/10.1007/BF00392326)
- Ferreira, R. (1986) Data in graphs and tables. *Nature*, **324** : 215-216 (20 November 1986). doi: 10.1038/324215b0
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PATENTS:

He is inventor and was (and still is) responsible for all technical and scientific aspects related to all patent applications and their variants listed below, either granted, under examination or submitted, including also the requests for patent life extensions and the responses to notifications from Patent Offices around the world.

Patents – Granted and applied for

Portfolio for BLAD Patents:

Case Ref	Working title	Country	Status	Priority Date	Application No	Publication No	Grant No	Grant Date	Expiry Date	Renewal Due Date	Annuity	Renewal mode I 2018	Possible actions 2018
P11268 Amr	BLAD-1	Armenia [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	N/A	N/A	N/A	N/A
P11268 ATe	BLAD-1	Austria [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	850	N/A
P11268 ATe 2	BLAD-2	Austria [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	850	N/A
P11268 ATe 3	BLAD-3	Austria [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	850	N/A
P11268 Alw	BLAD-1	Australia [PCT]	Live - Granted/Registered	21 Jul 2005	2006271282	2007/010459	2006271282	07 Jul 2011	13 Jul 2026	13 Jul 2018	13	500	N/A
P11268 AZr	BLAD-1	Dead-Abandoned (Post-grant)	Live - Granted/Registered	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	N/A	N/A	N/A	N/A
P11268 BEe	BLAD-1	Belgium [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	320	N/A
P11268 BEe 2	BLAD-2	Belgium [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	320	N/A
P11268 BEe 3	BLAD-3	Belgium [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	320	N/A
P11268 BGe	BLAD-1	Bulgaria [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	445	N/A
P11268 BGe 2	BLAD-2	Bulgaria [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	445	N/A
P11268 BGe 3	BLAD-3	Bulgaria [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	445	N/A
P11268 BRw	BLAD	Brazil [PCT]	Live - Pending/Allowed/Accepted	21 Jul 2005	PI0613746-6	2007/010459			13 Jul 2026 plus extension period	13 Jul 2018	13	600	N/A
P11268 BRw 2	BLAD	Brazil [PCT]	Live - pending	21 Jul 2005	1220170137131	2007/010459			N/A	13 Jul 2018	13	600	Examination/response
P11268 BYr	BLAD	Belarus [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	N/A	N/A	N/A	N/A
P11268 CAw	BLAD	Canada [PCT]	Live - Granted/Registered	21 Jul 2005	2.617.052	2007/010459	2617052	04 Oct 2016	13 Jul 2026	13 Jul 2018	13	315	N/A
P11268 CHe	BLAD-1	Switzerland [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	570	N/A
P11268 CHe 2	BLAD-2	Switzerland [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	570	N/A
P11268 CHe 3	BLAD-3	Switzerland [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	570	N/A
P11268 CNw	BLAD	China [PCT]	Live - Granted/Registered	21 Jul 2005	200680034618,30	2007/010459	200680034618,3	22 May 2013	13 Jul 2026	13 Jul 2018	13	900	N/A
P11268 CNw 2	BLAD-2	China [PCT]	Live - Granted/Registered	21 Jul 2005	201310126477X	103314984	201310126477X	17 Feb 2015	13 Jul 2026	13 Jul 2018	13	900	N/A
P11268 CyE	BLAD-1	Cyprus [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	500	N/A
P11268 CyE 2	BLAD-2	Cyprus [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	500	N/A
P11268 CyE 3	BLAD-3	Cyprus [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	500	N/A
P11268 CZe	BLAD-1	Czech [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	475	N/A
P11268 CZe 2	BLAD-2	Czech [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	475	N/A
P11268 CZe 3	BLAD-3	Czech [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	475	N/A
P11268 DEe	BLAD-1	Germany [EP]	Live - Granted/Registered	21 Jul 2005	602006032532	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	775	N/A
P11268 DEe 2	BLAD-2	Germany [EP]	Live - Granted/Registered	21 Jul 2005	60 2006 044 929,1	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	775	N/A
P11268 DEe 3	BLAD-3	Germany [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	775	N/A
P11268 DKe	BLAD-1	Denmark [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	505	N/A
P11268 DKe 2	BLAD-2	Denmark [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	505	N/A
P11268 DKe 3	BLAD-3	Denmark [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	505	N/A
P11268 EAw	BLAD	Eurasian [PCT]	Nationalised	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	-	-	-	-	N/A
P11268 EEe	BLAD-1	Estonia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	N/A	13	N/A	N/A
P11268 EEe 2	BLAD-2	Estonia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	N/A	13	N/A	N/A
P11268 EEe 3	BLAD-3	Estonia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	N/A	13	N/A	N/A
P11268 EPw	BLAD-1	European [PCT]	Nationalised	21 Jul 2005	6780077,1	1907550	1907550	No more renewals					N/A
P11268 EPw 2	BLAD-2	European [PCT]	Nationalised	21 Jul 2005	10154293,4	2221383	2221383	No more renewals					N/A
P11268 EPw 3	BLAD-3	European [PCT]	Nationalised	21 Jul 2005	10177270,5	2333086	2333086	No more renewals					N/A
P11268 ESe	BLAD-1	Spain [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 ESe 2	BLAD-2	Spain [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 ESe 3	BLAD-3	Spain [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 FHe	BLAD-1	Finland [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	600	N/A
P11268 FHe 2	BLAD-2	Finland [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	600	N/A
P11268 FHe 3	BLAD-3	Finland [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	600	N/A
P11268 FRe	BLAD-1	France [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 FRe 2	BLAD-2	France [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 FRe 3	BLAD-3	France [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	400	N/A
P11268 GBe	BLAD-1	Uni.Kingdom[EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 GBe 2	BLAD-2	Uni.Kingdom[EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 GBe 3	BLAD-3	Uni.Kingdom[EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 GRe	BLAD-1	Greece [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	390	N/A
P11268 GRe 2	BLAD-2	Greece [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	390	N/A
P11268 GRe 3	BLAD-3	Greece [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	390	N/A
P11268 HHe	BLAD-1	Hungary [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	560	N/A
P11268 HHe 2	BLAD-2	Hungary [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	560	N/A
P11268 HHe 3	BLAD-3	Hungary [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	560	N/A
P11268 IEe	BLAD-1	Ireland [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 IEe 2	BLAD-2	Ireland [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 IEe 3	BLAD-3	Ireland [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	300	N/A
P11268 Ilw	BLAD	Israel [PCT]	Live - Granted/Registered	21 Jul 2005	188907	2007/010459	188907	01 Apr 2015	13 Jul 2026	13 Jul 2020	15	N/A	N/A
P11268 Inw	BLAD	India [PCT]	Live-Granted/Registered	21 Jul 2005	1194/DELNP/2008	2007/010459	284913	04 Jul 2017	13 Jul 2026	13 Jul 2018	13	500	Working statement

P11268 ISe	BLAD-1	Iceland[EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 ISe 2	BLAD-2	Iceland[EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 ISe 3	BLAD-3	Iceland[EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 ITe	BLAD-1	Italy [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	502012902106546	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	550	N/A
P11268 ITe 2	BLAD-2	Italy [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	502015000026388	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	550	N/A
P11268 ITe 3	BLAD-3	Italy [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	502015000010713	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	550	N/A
P11268 JPw	BLAD	Japan [PCT]	Live - Granted/Registered	21 Jul 2005	2008-522129	2007/010459	5080467	07 Sep 2012	13 Jul 2026	07 Sep 2018	13	500	N/A
P11268 KGr	BLAD	Kyrgyzstan [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 KZr	BLAD	Kazakistan [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LIe	BLAD-1	Liech'stein[EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	N/A	N/A
P11268 LIe 2	BLAD-2	Liech'stein[EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	N/A	N/A
P11268 LIe 3	BLAD-3	Liech'stein[EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	N/A	N/A
P11268 LTe	BLAD-1	Lithuania [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LTe 2	BLAD-2	Lithuania [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LTe 3	BLAD-3	Lithuania [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LUe	BLAD-1	Luxembourg [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	31 Jul 2017	N/A	N/A	N/A
P11268 LUe 2	BLAD-2	Luxembourg [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	31 Jul 2017	N/A	N/A	N/A
P11268 LUe 3	BLAD-3	Luxembourg [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	31 Jul 2016	N/A	N/A	N/A
P11268 LVe	BLAD-1	Latvia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LVe 2	BLAD-2	Latvia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 LVe 3	BLAD-3	Latvia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 Mce	BLAD-1	Monaco [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 Mce 2	BLAD-2	Monaco [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 Mce 3	BLAD-3	Monaco [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 Mdr	BLAD	Moldova [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	N/A	13 Jul 2017	N/A	N/A	N/A
P11268 Mxw	BLAD	Mexico [PCT]	Live - Granted/Registered	21 Jul 2005	MX/2008/000979	2007/010459	291884	09 Nov 2011	13 Jul 2026	13 Jul 2021	16	N/A	N/A
P11268 NLe	BLAD-1	Netherlands[EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	750	N/A
P11268 NLe 2	BLAD-2	Netherlands[EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	750	N/A
P11268 NLe 3	BLAD-3	Netherlands[EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	750	N/A
P11268 NZw	BLAD	NewZealand[PCT]	Live - Granted/Registered	21 Jul 2005	565242	2007/010459	565242	30 Sep 2014	13 Jul 2026	13 Jul 2018	13	250	N/A
P11268 PLe	BLAD-1	Poland [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	350	N/A
P11268 PLe 2	BLAD-2	Poland [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	350	N/A
P11268 PLe 3	BLAD-3	Poland [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	350	N/A
P11268 PT	BLAD	Portugal	Replaced by granted European		103322						No more renewals	N/A	N/A
P11268 PT 2	BLAD 2	Portugal	Replaced by granted European		103511						No more renewals	N/A	N/A
P11268 PTe	BLAD-1	Portugal [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	520	N/A
P11268 PTe 2	BLAD-2	Portugal [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	520	N/A
P11268 PTe 3	BLAD-3	Portugal [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	520	N/A
P11268 ROe	BLAD-1	Romania [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	425	N/A
P11268 ROe 2	BLAD-2	Romania [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	425	N/A
P11268 ROe 3	BLAD-3	Romania [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	425	N/A
P11268 RUr	BLAD	Russia [EA]	Live - Granted/Registered	21 Jul 2005	200800091	2007/010459	012336	28 Aug 2009	13 Jul 2026	13 Jul 2018	13	200	N/A
P11268 SEe	BLAD-1	Sweden [EP]	Live - Granted/Registered	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	13 Jul 2026	31 Jul 2018	13	450	N/A
P11268 SEe 2	BLAD-2	Sweden [EP]	Live - Granted/Registered	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	13 Jul 2026	31 Jul 2018	13	450	N/A
P11268 SEe 3	BLAD-3	Sweden [EP]	Live - Granted/Registered	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	13 Jul 2026	31 Jul 2018	13	450	N/A
P11268 SIe	BLAD-1	Slovenia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	P-200631457	1907550	1907550	17 Oct 2012	N/A	N/A	N/A	N/A	N/A
P11268 SIe 2	BLAD-2	Slovenia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,4	2221383	2221383	25 Mar 2015	N/A	N/A	N/A	N/A	N/A
P11268 SIe 3	BLAD-3	Slovenia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,5	2333086	2333086	07 Jan 2015	N/A	N/A	N/A	N/A	N/A
P11268 SKe	BLAD-1	Slovakia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	6780077,1	1907550	1907550	17 Oct 2012	N/A	N/A	N/A	N/A	N/A
P11268 SKe 2	BLAD-2	Slovakia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10154293,40	2221383	2221383	25 Mar 2015	N/A	N/A	N/A	N/A	N/A
P11268 SKe 3	BLAD-3	Slovakia [EP]	Dead-Abandoned (Post-grant)	21 Jul 2005	10177270,50	2333086	2333086	07 Jan 2015	N/A	N/A	N/A	N/A	N/A
P11268 Tjr	BLAD	Tajikistan [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091,00	2007/010459	012336	28 Aug 2009	N/A	N/A	N/A	N/A	N/A
P11268 TMr	BLAD	Turk'm'stan [EA]	Dead-Abandoned (Post-grant)	21 Jul 2005	200800091,00	2007/010459	012336	28 Aug 2009	N/A	N/A	N/A	N/A	N/A
P11268 TRe	BLAD-1	Turkey [EP]	Live - Granted/Registered	21 Jul 2005	6780077,10	1907550	1907550	17 Oct 2012	13 Jul 2026	13 Jul 2018	13	400	N/A
P11268 TRe 2	BLAD-2	Turkey [EP]	Live - Granted/Registered	21 Jul 2005	10154293,40	2221383	2015/07832	25 Mar 2015	13 Jul 2026	13 Jul 2018	13	400	N/A
P11268 TRe 3	BLAD-3	Turkey [EP]	Live - Granted/Registered	21 Jul 2005	10177270,50	2333086	2333086	07 Jan 2015	13 Jul 2026	13 Jul 2018	13	400	N/A
P11268 USw	BLAD	US [PCT]	Live - Granted/Registered	21 Jul 2005	11996279,00		8106252	31 Jan 2012	13 Jul 2026 plus extension	31 Jul 2019	13	N/A	N/A
P11268 USw 2	BLAD-2	US [PCT]	Live - Granted/Registered	21 Jul 2005	12/893,889	2011-0088128	8,541,654	24 Sep 2013	13 Jul 2026 plus extension	24 Mar 2021	13	N/A	N/A
P11268 USw 3	BLAD-3	US [PCT]	Live - Granted/Registered	21 Jul 2005	13/965,590	2014-0007303	9382300	05 Jul 2016	13 Jul 2026	05 Jan 2020	13	N/A	N/A
P11268 WO	BLAD	P.C.T.	Dead-Gone National (PCT)	21 Jul 2005	PCT/IB2006/052403	2007/010459					N/A	N/A	N/A
P11268 ZAw	BLAD	South Africa	Live - Granted/Registered	21 Jul 2005	2008/0581	2007/010459				13-jul-26	All paid	N/A	N/A
P11335 ATe	BLAD A	Austria [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06 Dec 2017	12-out-31	12 Oct 2018	8		
P11335 BEe	BLAD A	Belgium [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06 Dec 2017	12-out-31	12 Oct 2018	8		
P11335 BGe	BLAD A	Bulgaria [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06 Dec 2017	12-out-31	12 Oct 2018	8		
P11335 AUw	BLAD A	Australia [PCT]	Live - Granted/Registered	12 Oct 2010	2011315525	2012/049215	2011315525	06 Sep 2016	12 Oct 2031	12 Oct 2018	8	340	N/A
P11335 BRw	BLAD A	Brazil [PCT]	Live - Pending	12 Oct 2010	112013008772-2	2012/049215			12 Oct 31 plus extension	12 Oct 2018	8	450	Slow process, no action expected

P11335 CAw	BLAD A	Canada [PCT]	Live - Granted/Registered	12 Oct 2010	2814428	2012/049215	2814428	10-abr-18	12-out-31	12 Oct 2018	8	250	Exam response /grant stage
P11335 CLw	BLAD A	Chile [PCT]	Live - Granted/Registered	12 Oct 2010	00991-2013	2012/049215	55586	02-jan-18	12-out-31	12-out-18	8	N/A	Likely response s/grant stage
P11335 CNw	BLAD A	China [PCT]	Live - Pending	12 Oct 2010	201180049655.2	103228160			12-out-31		8	Possible 350	Response /divisional/appeal/grant
P11335 COW	BLAD A	Colombia [PCT]	Live - Pending	12 Oct 2010	13-117.694	2012/049215			12-out-31		8		Likely response s/grant stage
P11335 CyE	BLAD A	Cyprus [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 CZe	BLAD A	Czech [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 DEe	BLAD A	Germany [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 DKe	BLAD A	Denmark [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 EAw	BLAD A	Eurasian [PCT]	Live - Pending	12 Oct 2010	201390487	2012/049215			12-out-31		8		Examination response/grant stage
P11335 EGw	BLAD A	Egypt [PCT]	Live - Pending	12 Oct 2010	615/2013	2012/049215			12-out-31	12 Oct 2018	8	300	Examination response/grant stage
P11335 EPw	BLAD A	European [PCT]	Nationalised	12 Oct 2010	11769866,2	2627201			12-out-31	31 Oct 2018	8	Unlikely	Validation and renewals
P11335 ESe	BLAD A	Spain [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 Fie	BLAD A	Finland [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 FRe	BLAD A	France [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 GBe	BLAD A	United Kingdom [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 GB	BLAD A	United Kingdom	Replaced by European		1017284.9	2484509					N/A		N/A
P11335 GRe	BLAD A	Greece [EP]	Live - Granted/Registered	12-out-10	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 HJc	BLAD A	Hungary [EP]	Live - Granted/Registered	12-out-10	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 IDw	BLAD A	Indonesia [PCT]	Dead-Abandoned	12 Oct 2010	00201301540	2012/049215				N/A	N/A	N/A	N/A
P11335 IEe	BLAD A	Ireland [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018			
P11335 ILw	BLAD A	Israel [PCT]	Live - Pending	12 Oct 2010	225495	2012/049215			12-out-31	12 Oct 2018	8		Likely grant stage
P11335 INw	BLAD A	India [PCT]	Live - Pending	12 Oct 2010	3233/CHENP/2013	2012/049215			12-out-31		8		Examination response /grant stage
P11335 ITe	BLAD A	Italy [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18			
P11335 JPw	BLAD A	Japan [PCT]	Live - Granted/Registered	12 Oct 2010	2013-533203	2012/049215	5934225	13-mai-16	12-out-31	13 May 2019	8		N/A
P11335 LIe	BLAD A	Liech'stein[EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 MXw	BLAD A	Mexico [PCT]	Live - Granted/Registered	12 Oct 2010	MX/A/2013/004047	2012/049215	344183	08-dez-16	12-out-31	12-out-21	8		N/A
P11335 MYw	BLAD A	Malaysia [PCT]	Dead-Abandoned	12 Oct 2010	PT 2013001141	2012/049215				N/A	N/A		N/A
P11335 NGw	BLAD A	Nigeria [PCT]	Dead-Abandoned	12 Oct 2010	NG/C/2013/241	2012/049215		NG/C/2013/241	04 Mar 2016	N/A	N/A	N/A	N/A
P11335 NZw	BLAD A	New Zealand [PCT]	Live - Granted/Registered	12 Oct 2010	610400	2012/049215	610400	25 Mar 2015	12 Oct 2031	12 Oct 2018	8	200	N/A
P11335 PEw	BLAD A	Peru [PCT]	Dead-Abandoned	12 Oct 2010	00853-2013/DIN	2012/049215				N/A	N/A	N/A	N/A
P11335 PHw	BLAD A	Philippines [PCT]	Live - Pending	12 Oct 2010	1-2013-500692	2012/049215			12-out-31	19 Apr 2018	8	275	Examination response /grant stage
P11335 PLe	BLAD A	Poland [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 PT	BLAD A	Portugal	Live - Pending		105330				12-out-31	12 Oct 2018	8	220	Replacing with granted European
P11335 PTe	BLAD A	Portugal [EP]	Live - Granted/Registered	12-out-10	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 ROe	BLAD A	Romania [EP]	Live - Granted/Registered	12-out-10	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 SEe	BLAD A	Sweden [EP]	Live - Granted/Registered	12-out-10	11769866,2	2627201	2627201	06-dez-17	12-out-31	12 Oct 2018	8		
P11335 SGw	BLAD A	Singapore [PCT]	Live - Granted/Registered	12 Oct 2010	2013027677	2012/049215	189379	14 Sep 2015	12 Oct 2031	12 Oct 2018	8	350	N/A
P11335 THw	BLAD A	Thailand [PCT]	Dead-Abandoned	12 Oct 2010	1301001931	2012/049215				N/A	N/A	N/A	N/A
P11335 TRe	BLAD A	Turkey [EP]	Live - Granted/Registered	12 Oct 2010	11769866,2	2627201	2627201	06-dez-17	12-out-31	12-out-18	8		
P11335 UAw	BLAD A	Ukraine [PCT]	Live - Granted/Registered	12 Oct 2010	2013 05362	2012/049215	113151	26-dez-16	12-out-31	12 Oct 2018	8	550	N/A
P11335 USw	BLAD A	US [PCT]	Live - Pending	12 Oct 2010	13/879,151	2012/049215					8	N/A	Examination response s/divisionals
P11335 WO	BLAD A	P.C.T.	Nationalised	12 Oct 2010	PCT/EP2011/067824	2012/049215					N/A		N/A
P11335 ZAw	BLAD A	South Africa	Live - Granted/Registered	12 Oct 2010	2013/02931	2012/049215	2013/02931	27 Nov 2013	12 Oct 2031	12 Oct 2018	8	200	N/A
P11336 AUw	BLAD B	Australia [PCT]	Live - Granted/Registered	12 Oct 2010	2011315523	2012/049213	2011315523	24 Dec 2015	12 Oct 2031	12 Oct 2018	8	340	N/A
P11336 BRw	BLAD B	Brazil [PCT]	Live - Pending	12 Oct 2010	BR112013008768-4	2012/049213			12 Oct 31 plus extension	12 Oct 2018	8	450	Examination response /grant stage

P11336 CAw	BLAD B	Canada [PCT]	Live - Granted/Registered	12 Oct 2010	2814383	2012/049213	2814383	10-abr-18	12-out-31	12 Oct 2018	8	250	Examination response /grant stage
P11336 CLw	BLAD B	Chile [PCT]	Live - Granted/Registered	12 Oct 2010	00992-2013	2012/049213	55587	08-jan-18	12-out-31	12-out-18	8		Examination response /grant stage
P11336 CNw	BLAD B	China [PCT]	Live - Granted/Registered	12 Oct 2010	2011800493446	103228161A	ZL201180049344.6	14 Aug 2015	12 Oct 2031	12 Oct 2018	8	400	N/A
P11336 COW	BLAD B	Colombia [PCT]	Dead-Abandoned	12 Oct 2010	13-117.704	2012/049213				N/A	N/A	N/A	N/A
P11336 EAw	BLAD B	Eurasian [PCT]	Live- Granted/Registered	12 Oct 2010	201390486	2012/049213	26573	28-abr-17	12-out-31	12-out-18	8		N/A
P11336 Ruw	BLAD B	Russia [EA]	Live - Granted/Registered	12 Oct 2010	201390486	2012/049213	26573	28-abr-17	12-out-31	12-out-18	8	£200	
P11336 EGw	BLAD B	Egypt [PCT]	Live- Granted/Registered	12 Oct 2010	614/2013	2012/049213	27410	11 Jan 2016	12 Oct 2031	12 Oct 2018	8	250	N/A
P11336 EPw	BLAD B	European [PCT]	Live - Pending	12 Oct 2010	11767732.8	2627202			12-out-31	31 Oct 2018	8	1300	Reporting and responding to office action
P11336 GB	BLAD B	United Kingdom	Replaced by European		1017283.1	2484508							N/A
P11336 IDw	BLAD B	Indonesia [PCT]	Dead-Abandoned	12 Oct 2010	W-00201301538	2012/049213				N/A	N/A	N/A	N/A
P11336 ILw	BLAD B	Israel [PCT]	Live - Granted/Registered	12 Oct 2010	225496	2012/049213	225496	01-nov-16	12-out-31	12 Oct 2018	8	500	Filing information disclosure statement
P11336 INw	BLAD B	India [PCT]	Live - Pending	12 Oct 2010	3232/CHENP/2013	2012/049213			12-out-31		8		Examination response /grant stage
P11336 JPw	BLAD B	Japan [PCT]	Live - Granted/Registered	12 Oct 2010	2013-533202	2013-540442	6239383	10-nov-17	12-out-31		8		Examination response /grant stage
P11336 MXw	BLAD B	Mexico [PCT]	Live - Granted/Registered	12 Oct 2010	MX/A/2013/004104	2012/049213	347600	03-mai-17	12-out-31	12-out-22	8	N/A	
P11336 MYw	BLAD B	Malaysia [PCT]	Dead-Abandoned	12 Oct 2010	PI 2013001140	2012/049213				N/A	N/A	N/A	N/A
P11336 NGw	BLAD B	Nigeria [PCT]	Dead-Abandoned	12 Oct 2010	NG/C/2013/239	2012/049213	NG/C/2013/239	04 Mar 2016		N/A	N/A	N/A	N/A
P11336 NZw	BLAD B	New Zealand [PCT]	Live - Granted/Registered	12 Oct 2010	610389	610389	610389	03 Mar 2015	12 Oct 2031	12 Oct 2018	8	200	N/A
P11336 PEw	BLAD B	Peru [PCT]	Dead-Abandoned	12 Oct 2010	000855-2013/DIN	2012/049213				N/A	N/A	N/A	N/A
P11336 PHw	BLAD B	Philippines [PCT]	Live - Granted/Registered	12 Oct 2010	12013500693	2012/049213	12013500693	07-jun-17	12-out-31	19 Apr 2018	8	275	Examination response /grant stage
P11336 PT	BLAD B	Portugal	Live - Pending		105331					12 Oct 2018	8	220	Postponement
P11336 SGw	BLAD B	Singapore [PCT]	Dead-Abandoned	12 Oct 2010	201302768-5	2012/049213	189380	22 Jul 2014		N/A	N/A	N/A	N/A
P11336 THw	BLAD B	Thailand [PCT]	Dead-Abandoned	12 Oct 2010	1301001932	136438					N/A		N/A
P11336 UA w	BLAD B	Ukraine [PCT]	Live - Granted/Registered	12 Oct 2010	2013 05364	2012/049213	113152	26-dez-16	12-out-31	12-out-18	8	550	N/A
P11336 USw	BLAD B	US [PCT]	Live - Granted/Registered	12 Oct 2010	13/879,162	2012/049213	9095166	04 Aug 2015	12 Oct 31 plus extension	02 Feb 2020	8		N/A
P11336 USw 2	BLAD B	US [PCT]	Live - Granted/Registered	12 Oct 2010	14/752984	2012/049213	9095166	04 Aug 2016	12 Oct 31 plus extension	04 Feb 2020	8		N/A
P11336 WO	BLAD B	P.C.T.	Nationalised	12 Oct 2010	PCT/EP2011/067821	2012/049213					8		N/A
P11336 ZAw	BLAD B	South Africa	Live - Granted/Registered	12 Oct 2010	2013/02932	2012/049213	2013/02932	27 Nov 2013	12 Oct 2031	12 Oct 2018	8	200	N/A
P11337 ALe	BLAD C	Albania [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 ATe	BLAD C	Austria [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	340	N/A
P11337 AUw	BLAD C	Australia [PCT]	Live - Granted/Registered	12 Oct 2010	2011315527	2011315527	2011315527	07 Jan 2016	12 Oct 2031	12 Oct 2018	8	300	N/A
P11337 BEe	BLAD C	Belgium [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	175	N/A
P11337 BGe	BLAD C	Bulgaria [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	220	N/A
P11337 BRw	BLAD C	Brazil [PCT]	Live - Pending	12 Oct 2010	112013008869-9	2012/049217			12 Oct 2031 plus extension	12 Oct 2018	8	450	Examination response /grant stage
P11337 CAw	BLAD C	Canada [PCT]	Live - Granted/Registered	12 Oct 2010	2814565	2012/049217	2814565	10-abr-18	12-out-31	12 Oct 2018	8	250	Examination response /grant stage
P11337 CHe	BLAD C	Switzerland [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	330	N/A
P11337 CLw	BLAD C	Chile [PCT]	Live - Granted/Registered	12 Oct 2010	00994-2013	2012/049217	54664	01-jun-17	12-out-31	N/A	8	N/A	
P11337 CNw	BLAD C	China [PCT]	Live - Granted/Registered	12 Oct 2010	201180049654,80	103347387	ZL201180049654.8	22 Apr 2015	12 Oct 2031	12 Oct 2018	8	400	N/A
P11337 COW	BLAD C	Colombia [PCT]	Dead-Abandoned	12 Oct 2010	13-117.689	2012/049217					N/A		N/A
P11337 Cy e	BLAD C	Cyprus [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	310	N/A
P11337 CZe	BLAD C	Czech [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	200	N/A
P11337 DEe	BLAD C	Germany [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	300	N/A
P11337 DKe	BLAD C	Denmark [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	325	N/A
P11337 EAw	BLAD C	Eurasian [PCT]	Live - Granted/Registered	12 Oct 2010	201390489	2012/049217	27441	31-jul-17	12-out-31	12-out-18	8	N/A	N/A
P11337 Ruw	BLAD C	Eurasian [PCT]	Live - Granted/Registered	12 Oct 2010	201390489	2012/049217	27441	31-jul-17	12-out-31	12-out-18	8	200	

P11337 Ee	BLAD C	Estonia [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	
P11337 EGw	BLAD C	Egypt [PCT]	Live - Granted/Registered	12 Oct 2010	616/2013	2012/049217	27580	16-jun-16	12-out-31	12 Oct 2018	8	250	N/A
P11337 EPw	BLAD C	European [PCT]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A		N/A
P11337 ESe	BLAD C	Spain [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	170	N/A
P11337 Fie	BLAD C	Finland [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	340	N/A
P11337 FRe	BLAD C	France [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	180	N/A
P11337 GB	BLAD C	United Kingdom	Replaced by European		1017282,3	2484507					N/A		N/A
P11337 GBe	BLAD C	United Kingdom [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	160	N/A
P11337 GRe	BLAD C	Greece [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	175	N/A
P11337 HRe	BLAD C	Croatia [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	270	N/A
P11337 HUe	BLAD C	Hungary [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	450	N/A
P11337 IDw	BLAD C	Indonesia [PCT]	Live - Pending	12 Oct 2010	W-00201301541	2015/05631					8		Examination/grant stage
P11337 IEe	BLAD C	Ireland [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	200	
P11337 ILw	BLAD C	Israel [PCT]	Live - Granted/Registered	12 Oct 2010	225497	2012/049217	225497	29-mai-17	12-out-31	12 Oct 2018	8	400	Filing information disclosure statement
P11337 INw	BLAD C	India [PCT]	Live - Pending	12 Oct 2010	3234/CHENP/2013	2012/049217			12-out-31		8		Examination response/grant stage
P11337 ISe	BLAD C	Iceland[EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 ITe	BLAD C	Italy [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	210	N/A
P11337 JPw	BLAD C	Japan [PCT]	Live - Granted/Registered	12 Oct 2010	2013-533204	2013-539776	6091416	17-fev-17	12-out-31	17-fev-20	8	N/A	N/A
P11337 LIe	BLAD C	Liech'stein[EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8		N/A
P11337 LTe	BLAD C	Lithuania [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 LUe	BLAD C	Luxembourg [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 LVe	BLAD C	Latvia [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 Mce	BLAD C	Monaco [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 MKe	BLAD C	Macedonia [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	200	N/A
P11337 MTe	BLAD C	Malta [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	215	N/A
P11337 MXw	BLAD C	Mexico [PCT]	Live - Granted/Registered	12 Oct 2010	MX/A/2013/004105	2012/049217	341698	31-ago-16	12-out-31	12-out-21	8	N/A	N/A
P11337 MYw	BLAD C	Malaysia [PCT]	Live - Pending	12 Oct 2010	2013001139	2012/049217					8		grant stage
P11337 NGw	BLAD C	Nigeria [PCT]	Dead-Abandoned	12 Oct 2010	NG/C/2013/246	2012/049217	NG/C/2013/246			N/A	N/A	N/A	N/A
P11337 NLe	BLAD C	Netherlands[EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	31 Oct 2018	8	320	N/A
P11337 NOe	BLAD C	Norway [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	350	N/A
P11337 NZw	BLAD C	NewZealand[PCT]	Live - Granted/Registered	12 Oct 2010	610396	2012/049217	610396	25 Mar 2015	12 Oct 2031	12 Oct 2018	8	200	N/A
P11337 PEw	BLAD C	Peru [PCT]	Live - Granted/Registered	12 Oct 2010	00854-2013/DIN	2012/049217	00854-2013/DIN	16-jan-18	12-out-31	31 Oct 2018	8	430	Examination response/grant stage
P11337 PHw	BLAD C	Philippines[PCT]	Live - Granted/Registered	12 Oct 2010	1-2013-500690	2012/049217	1-2013-500690	24-abr-17	12-out-31	19 Apr 2018	8	330	N/A
P11337 Ple	BLAD C	Poland [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	215	N/A
P11337 PT	BLAD C	Portugal	Live - Pending		105332					12 Oct 2018	8	220	Postponement
P11337 PTe	BLAD C	Portugal [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	220	N/A
P11337 RSe	BLAD C	Serbia [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	275	N/A
P11337 ROe	BLAD C	Romania [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	275	N/A
P11337 SEe	BLAD C	Sweden [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	285	N/A
P11337 SKe	BLAD C	Slovakia [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 SMe	BLAD C	San Marino [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 SGw	BLAD C	Singapore [PCT]	Dead-Abandoned (Post-grant)	12 Oct 2010	201302769-3	2012/049217	189381	02 Sep 2015		N/A	N/A	N/A	N/A
P11337 SIe	BLAD C	Slovenia [EP]	Dead-Abandoned	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016		N/A	N/A	N/A	N/A
P11337 THw	BLAD C	Thailand [PCT]	Live - Pending	12 Oct 2010	1301001933	136439					8		Exam/gra nt stage
P11337 TRe	BLAD C	Turkey [EP]	Live - Granted/Registered	12 Oct 2010	11767734,4	2627177	2627177	10 Aug 2016	12 Oct 2031	12 Oct 2018	8	290	N/A
P11337 UAw	BLAD C	Ukraine [PCT]	Live - Granted/Registered	12 Oct 2010	2013 05360	2012/049217	113150	26-dez-16	12-out-31	12-out-18	8	500	N/A
P11337 USw	BLAD C	US [PCT]	Live - Pending	12 Oct 2010	13/879,169	2012/049217					8		Examination/grant stage
P11337 WO	BLAD C	P.C.T.	Dead-Gone National (PCT)	12 Oct 2010	PCT/EP2011/067828	2012/049217					N/A		N/A
P11337 ZAw	BLAD C	South Africa	Live - Granted/Registered	12 Oct 2010	2013/02933	2012/049217	2013/02933	24 Jun 2015	12 Oct 2031	12 Oct 2018	8	200	N/A

Portfolio for TOM.ESCA Patents:

Working title	Country	Status	Priority Date	Application No	Publication No	Grant No	Grant Date	Annuity
TOM.ESCA	European [PCT]	Live - Pending	12 Oct 2010					6
TOM.ESCA	US [PCT]	Live - Granted/Registered	12 Oct 2010					6
TOM.ESCA	Australia [PCT]	Live - Granted/Registered	12 Oct 2010					6
TOM.ESCA	South Africa	Live - Granted/Registered	12 Oct 2010	2013/03213		2013/03213	29 Jan 2014	6

Portfolio for DEFLAMIN Patents:

Case Ref	Type	Title/Mark	Country	Status	Priority No	Priority Date	Application No	Application Date	Publication No	Grant No	Grant Date	Renewal Due Date	Ann - uity	Dates Due in Next 12 Months	
3															
4	P12155 AUw	Patent	Deflamn Australa [PCT]	Live - Pending	1616715.7	30 Sep 2016	2017334047	02 Oct 2017	2018/060528			02 Oct 2021	5		
5	P12155 BRw	Patent	Deflamn Brazil [PCT]	Live - Pending	1616715.7	30 Sep 2016	112019006174-6	02 Oct 2017	112019006174-6			02 Oct 2021	5	27 Jul 2021	Progress
6															
7	P12155 CAw	Patent	Deflamn Canada [PCT]	Live - Pending	1616715.7	30 Sep 2016	3037800	02 Oct 2017	2018/060528			02 Oct 2021	5	2 Jul 2021	Exam due in 3 months
8														2 Oct 2021	Exam due
9	P12155 CLw	Patent	Deflamn Chile [PCT]	Live - Pending	1616715.7	30 Sep 2016	00846-2019	02 Oct 2017	00846-2019					Not set	Filing further response, grant stage formalities
10															
11	P12155 CNw	Patent	Deflamn China [PCT]	Live - Pending	1616715.7	30 Sep 2016	201780072761.X	02 Oct 2017	110214017					Not set	Filing response, grant stage formalities
12															
13	P12155 COw	Patent	Deflamn Colombia [PCT]	Live - Pending	1616715.7	30 Sep 2016	NC2019/0003865	02 Oct 2017	NC2019/0003865					13 Apr 2021	Deadline to respond to Office Action
14														Not set	Further response
15	P12155 EPw	Patent	Deflamn European [PCT]	Live - Pending	1616715.7	30 Sep 2016	17809192.2	02 Oct 2017	3518957			31 Oct 2021	5	Not set	Respond to examination report
16															
17	P12155 ILw	Patent	Deflamn Israel [PCT]	Live - Pending	1616715.7	30 Sep 2016	265708	02 Oct 2017	2018/060528			02 Oct 2023	7	Not set	Filing response, grant stage formalities
18															
19	P12155 INw	Patent	Deflamn India [PCT]	Live - Pending	1616715.7	30 Sep 2016	201917017103	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
20															
21	P12155 JPw	Patent	Deflamn Japan [PCT]	Live - Pending	1616715.7	30 Sep 2016	2019-538725	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
22															
23	P12155 KRw	Patent	Deflamn S Korea [PCT]	Live - Pending	1616715.7	30 Sep 2016	10-2019-7010566	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
24	P12155 MXw	Patent	Deflamn Mexico [PCT]	Live - Pending	1616715.7	30 Sep 2016	MX/A/2019/003751	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
25															
26	P12155 MYw	Patent	Deflamn Malaysia [PCT]	Live - Pending	1616715.7	30 Sep 2016	P12019001611	02 Oct 2017	2018/060528					2 Sep 2021	Request for Examination due in 1 Month
27														2 Oct 2021	Exam Due
29	P12155 SGw	Patent	Deflamn Singapore [PCT]	Live - Pending	1616715.7	30 Sep 2016	11201902689W	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
30															
31															
32	P12155 THw	Patent	Deflamn Thailand [PCT]	Live - Pending	1616715.7	30 Sep 2016	1901001909	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
33															
34	P12155 USw	Patent	Deflamn US [PCT]	Live - Pending	1616715.7	30 Sep 2016	16/338,485	02 Oct 2017	2018/060528					Not set	Filing response, grant stage formalities
35															
36	P12155 ZAw	Patent	Deflamn South Africa	Live - Granted/Registered	1616715.7	30 Sep 2016	2019/02689	02 Oct 2017	2018/060528	2019/02689	27/112019	02 Oct 2021	5		

Patent Families:

BLAD: Protein extracted from plants of the genus *Lupinus* or produced in recombinant form, nucleotide sequence encoding it and its use in animal nutrition, as a plant growth promoter and in the fight against pathogenic fungi.

PCT International Patent Application No. PCT/IB2006/052403. Filed on 13 July 2006.

Inventors: De Seixas Boavida Ferreira, Ricardo Manuel; Valadas Da Silva Monteiro, Sara Alexandra; Borges Loureiro, Virgílio; Nascimento Teixeira, Artur Ricardo.

BLAD-A: Lupinus protein for use against human pathogens

PCT International Patent Application No. PCT/EP2011/067824. Filed on 12 October 2011.

Inventors: Carreira, Alexandra Manuela Lourenço; Valadas da Silva Monteiro, Sara Alexandra; de Seixas Boavida Ferreira, Ricardo Manuel.

BLAD-B: Use of a composition comprising an antimicrobial peptide as a food preservative

PCT International Patent Application No. PCT/EP2011/067821. Filed on 12 October 2011.

Inventors: Carreira, Alexandra Manuela Lourenço; Valadas da Silva Monteiro, Sara Alexandra; de Seixas Boavida Ferreira, Ricardo Manuel.

BLAD-C: Metals chelators for use in improving activity of fungicides / bactericides effective against plant pathogens

PCT International Patent Application No. PCT/EP2011/067828. Filed on 12 October 2011.

Inventors: Carreira, Alexandra Manuela Lourenço; Valadas da Silva Monteiro, Sara Alexandra; de Seixas Boavida Ferreira, Ricardo Manuel.

TOM.ESCA: Diagnostic method and treatment

PCT International Patent Application No. PCT/EP2011/068320. Filed on 20 October 2011. Available at

<https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2012052506>

Inventores: de Seixas Boavida Ferreira, Ricardo Manuel; Mendes da Costa Ferreira Correia de Oliveira, Maria Helena; Valadas da Silva Monteiro, Sara Alexandra.

DEFLAMIN: Therapeutic protein

PCT International Patent Application No. PCT/EP2017/075020. Filed on 30 September 2017. Available at <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2018060528&recNum=4&office=&queryString=FP%3A%28075020%29&prevFilter=&sortOption=Pub+Date+Desc&maxRec=48>

Inventors: Gusmão Lima, Ana Isabel; Mota Guerreiro, Joana Patrícia; de Seixas Boavida Ferreira, Ricardo Manuel.

<https://patentscope.wipo.int/search/en/detail.jsf;jsessionid=DDB0A8350FCD7FF37FA88DA7D11A0994.wapp1nB?docId=WO2018060528&tab=PCTBIBLIO>

WINEDEPROT: Compound, method of production and uses thereof

Applicants: Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa e Instituto Superior de Agronomia da Universidade de Lisboa

Inventors: Boavida Ferreira, Ricardo [PT]; da Silva Pinto Ferreira, Luisa Maria [PT]; Gueorguiev Velizarov, Svetlozar [PT]; Rôla Coelho, Isabel Maria [PT]; Ventura das Chagas, Ricardo Alexandre [PT]

INPI Provisional Patent Application no. 20181000026253. Filed on 2018-04-13 (Priority: 2018-04-13, PT11068218A 2018-04-13)

PCT International Patent Application no. PCT/IB2018/052632. Filed on 16 April 2018.

Publication: 2019-10-17, WO2019197884A1

Available at:

<https://worldwide.espacenet.com/patent/search/family/062235987/publication/WO2019197884A1?q=pn%3DWO2019197884A1>

SKOPOBIOTA, Blad & Bentochar:

WO2020245438 - Plant treatment

Inventors: Del Frari, Giovanni, Gusmão Lima, Ana Isabel; de Seixas Boavida Ferreira, Ricardo Manuel; Mendes da Costa Ferreira Correia de Oliveira, Maria Helena

INPI Provisional patent Application no. 115569. Filed on 06 June 2019.

PCT International Patent Application no. PCT/EP2020/065742. Filed on 05 June 2020, 19:24 h (CEST).

Available at:

<https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2020245438&docAn=EP2020065742>

RuBisCO - Phytate:

Process of obtaining a purified RuBisCO preparation from a photosynthetic material

Inventors: Ricardo Manuel de Seixas Boavida Ferreira, Ana Isabel Gusmão Lima, Sabrina dos Santos Oliveira

Applicant: ISA-UL

Filing date: 17 March 2021

Provisional applications:

United Kingdom Patent Application (Application No: 2103686.8)

Applicant: Instituto Superior de Agronomia

Title: Process of obtaining a purified RuBisCO preparation from a photosynthetic material

Our Ref: P13435 GB

RuBisCO – Activated charcoal:

Improved process of obtaining a protein preparation

Inventors: Ricardo Manuel de Seixas Boavida Ferreira, Madalena de Matos Águas Grácio, Giovanni Del Frari

Applicant: ISA-UL

Filing date: 10 February 2022

Provisional applications:

- Portuguese Patent Application (Application No: 20221000000736)

Applicant: Instituto Superior de Agronomia

Title: Improved process of obtaining a protein preparation

ip21 Ref: P13717 PT

- United Kingdom Patent Application (Application No: 2201737.0)

Applicant: Instituto Superior de Agronomia

Title: Improved process of obtaining a protein preparation

ip21 Ref: P13717 GB

Blad patents

