

<b>Parte A. DATOS PERSONALES</b>		<b>Fecha del CVA</b>		19-05-2018
Nombre y apellidos	ENRIQUE MONTE VÁZQUEZ			
DNI/NIE/pasaporte	28.446.508Q	Edad	60	
Núm. identificación del investigador	Researcher ID	A-9008- 2017		
	Código Orcid	<a href="https://orcid.org/0000-0002-0166-5181">0000-0002-0166-5181</a>		

**A.1. Situación profesional actual**

Organismo	<b>Universidad de Salamanca</b>			
Dpto./Centro	<b>Instituto Hispano-Luso de Investigaciones Agrarias (CIALE)</b>			
Dirección	Río Duero, 12, Campus de Villamayor, 37185 Salamanca			
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	<b>Catedrático de Universidad</b>		Fecha inicio	18-12-2007
Espec. cód. UNESCO	2414 y 3108			
Palabras clave	Plant Microbiology, <i>Trichoderma</i> , Biocontrol, Phytopathology, Molecular plant-microbe interaction			

**A.2. Formación académica (título, institución, fecha)**

Licenciatura/Grado/Doctorado	Universidad	Año
Licenciado en Farmacia	Universidad de Sevilla	1980
Grado de Licenciado en Farmacia	Universidad de Sevilla	1982
Doctor en Farmacia (Premio Extraordinario)	Universidad de Salamanca	1986

**A.3. Indicadores generales de calidad de la producción científica (véanse instrucciones)**

- Sexenios de investigación: **5** (próximo en 2019)
- Tesis Doctorales dirigidas (10 años): **6**
- Citas totales (ISI WoS): **3.587**
- Citas/año (ISI WoS, 5 años): **391**
- Publicaciones en 1<sup>er</sup> cuartil (Q1): **55**                      Publicaciones en revistas SCI: **102**
- Patentes: **25**
- Índice h (ISI WoS): **36**    Índice h (Google Scholar): **42**

**Parte B. RESUMEN LIBRE DEL CURRÍCULUM (máximo 3500 caracteres con espacios)**

I am the leader of a research group (recognized as UIC055 by the regional government and as GIR by my university) formed by microbiologists, plant physiologists and plant pathologists at the Spanish-Portuguese Institute for Agricultural Research (CIALE) from the University of Salamanca. As microbiologist working with plant pathogenic fungi, I have published in the No. 1 journals of the ranking of Microbiology (*Nature Reviews Microbiology*), Phytopathology (*Annual Review of Phytopathology*) and Mycology (*Studies in Mycology, Fungal Genetics and Biology*). I am author of 6 books, 40 book chapters and 102 articles (h-index = 36) in SCI journals and 44 dissemination articles. I have also filled 25 patents: 16 Spanish, 4 European, 5 PCT and 1 USA. I am co-author of 295 congress reports of which 113 were as invited speaker in international (72) and national (41) conferences. I have been principal investigator of 21 competitive research projects and 18 research contracts with private companies (13), public institutions (4) and a private foundation (1), as well as co-ordinator of EU projects from the 3FP (AIR3-CT94-1322) and 4FP (FAIR6-CT98-4140), and principal investigator in projects from the 5FP (QLK3-CT-2002-02032) and 6FP (SSPE-CT-2004-502348).

In 1998, I set up the biotech company NBT to put on the market research results and patents of my group. NBT co-ordinated the *Trichoderma* functional genomics project (funded by the 5FP) and promoted the International *Trichoderma* Consortium with researchers from 11 countries to sequence the genomes of these fungi for biotech applications. My group also developed pioneering work to achieve the first mycofungicide product registered in Spain (TUSAL<sup>®</sup>) and became part of the task force to register *Trichoderma*-based formulations in the EU. However, the search for bicontrol strains, their multiplication in the laboratory and their validation in filed tests before commercialization is something that does not motivating

me because it has become a commodity, being far away from a scientific challenge. In 2010, I sold my shares of a consolidated NBT (with 27 workers, a lab for omics and epigenetics solutions, and production facilities) to dedicate myself exclusively to my teaching and research work on molecular plant-*Trichoderma* interactions.

I am specially proud of the *PhD Outstanding Prize* for the best doctorate student of my faculty (1986), the *Severo Ochoa Prize* (1999) from the Prince of Asturias Foundation (Oviedo, Spain) for the research of my group on methyl bromide alternatives in strawberry, and the Spanish Society for Microbiology *Fleming Prize* (2007) for the best publication in the field of mycology (Vizcaíno et al. 2006. *BMC Genomics* 7: 193).

Now I am interested in helping others to make the right decisions when selecting and applying biocontrol agents and understanding how the biocontrol works. My group is an international leader in the *Trichoderma*-plant molecular croostalk and we are exploring new approaches to realice the *Trichoderma*-triggered heritable effects on plant growth and defense.

### **Parte C. MÉRITOS MÁS RELEVANTES** (ordenados por tipología)

#### **C.1. Publicaciones** (diez más destacadas)

1. Rubio, M.B., Hermosa, R., Vicente, R., Gómez-Acosta, A., Morcuende, R., **Monte, E.** and Bettiol, W. (2017). The combination of *Trichoderma harzianum* and chemical fertilization leads to the deregulation of phytohormone networking, preventing the adaptive responses of tomato plants to salt stress. *Frontiers in Plant Science* 8: 294.
2. Medeiros, H.A., Araújo Filho, J.V., Freitas, L.G., Castillo P., Rubio, M.B., Hermosa, R. and **Monte E.** (2017). Tomato progeny inherit resistance to the nematode *Meloidogyne javanica* linked to plant growth induced by the biocontrol fungus *Trichoderma atroviride*. *Scientific Reports* 7: 40216
3. Malmierca, M.G., Barúa, J., McCormick, S.P., Cardoza, R.E., Alexander, N.J., Izquierdo-Bueno, I., Lindo, L., Casquero, P.A., Collado, I.G., **Monte, E.** and Gutiérrez, S. (2016). Trichothecenes and aspinolides produced by *Trichoderma arundinaceum* regulate expression of *Botrytis cinerea* genes involved in virulence and growth. *Environmental Microbiology* 18: 3991-4004.
4. Domínguez, S., Rubio, M.B., Cardoza R.E., Gutiérrez, S., Nicolás, C., Bettiol, W., Hermosa, R. and **Monte, E.** (2016). Nitrogen metabolism and growth enhancement in tomato plants challenged with *Trichoderma harzianum* expressing the *Aspergillus nidulans* acetamidase *amdS* gene. *Frontiers in Microbiology* 7: 1182.
5. Malmierca M.G., Barúa, J., McCormick, S.P., Izquierdo-Bueno, I., Cardoza, R.E., Alexander, N.J., Hermosa, R., Collado, I. G., **Monte, E.**, and Gutiérrez, S. (2015). Novel aspinolide production by *Trichoderma arundinaceum* with a potential role in *Botrytis cinerea* antagonistic activity and plant defence priming. *Environmental Microbiology* 17: 1103-1118.
6. Nicolás, C., Hermosa, R., Rubio, M.B., Mukherjee, P.K. and **Monte, E.** (2014). *Trichoderma* genes in plants for stress tolerance-status and prospects. *Plant Science* 228: 71-78.
7. Alonso-Ramírez, A., Poveda, J., Martín, J.I., Hermosa, R., **Monte, E.** and Nicolás, C. (2014). Salicylic acid prevents *Trichoderma harzianum* from entering the vascular system of the roots. *Molecular Plant Pathology* 15: 823-831.
8. \*Hermosa, R., Viterbo, A., Chet, I. and **Monte, E.** (2012). Plant-beneficial effects of *Trichoderma* and of its genes. *Microbiology* 158: 17-25.
9. \*Druzhinina, I.S., Seidl-Seiboth, V., Herrera-Estrella, A., Horwitz, B.A., Kenerley, C.M., **Monte E.**, Mukherjee, P., Zeilinger, S., Grigoriev I.V. and Kubicek, C.P. (2011). *Trichoderma*: the genomics of opportunistic success. *Nature Reviews Microbiology* 9: 749-759.
10. \*Lorito M, Woo SL, Harman GE and **Monte E.** (2010). Translational research on *Trichoderma*: from 'omics to the field. *Annual Review of Phytopathology* 48: 395-417.

\* These last three articles are "Fast Breaking Paper" awarded by the ISI WoS (the top 1% of papers in each field and each year)

### C.2. Proyectos (*siete más destacados*)

1. SA009U16 “Desarrollo de métodos moleculares para el estudio de la interacción *Trichoderma*-planta y su aplicación para el ahorro de insumos nitrogenados en cultivos de Castilla y León”. Project **UIC (Excelence) Junta de Castilla y León**. Coordinator: Enrique Monte. University of Salamanca. 2016-2018, 120.000 €.
2. AGL2015-70671-C2 “TRICHONUE: Interacciones moleculares *Trichoderma*-planta relacionadas con el uso eficiente de nitrógeno”. Project **MINECO**. Coordinator: Enrique Monte, Universities of Salamanca and León, 2016-2018, 165.000 €.
3. AGL2012-40041-C2 “TRICHOCLOCK: Tirosol y farnesol como moléculas autorreguladoras en *Trichoderma* y señalizadoras en la interacción *Trichoderma*-planta” Proyecto **MINECO**. Coordinator: Enrique Monte, Universities of Salamanca and León, 2013-2015, 165.000 €.
4. AGR 6082. “Manejo integrado de la Verticilosis del olivo causada por el patotipo defoliante de *Verticillium dahliae* mediante la utilización combinada de patrones de acebuche resistentes y hongos beneficiosos” Project of **Excelence Junta de Andalucía**. PI: Rafael M. Jiménez-Díaz, University of Córdoba, 2011-2014, 208.247 €. Researcher.
5. AGL-2004-06322-C02-02/AGR “Selección de Aislados de Hongos Entomopatógenos productores de metabolitos proteínicos insecticidas para el Control Biológico de Plagas de Insectos”. Proyecto **MEC**. PI en Salamanca: Enrique Monte. Universities of Salamanca and Córdoba. 2004-2007, 57.500 €.
6. FAIR6-CT98-4140 “Substitution of methyl bromide fumigation and disease management in strawberry crops by IPM strategies”. Project **RTD EU 4FP**. Coordinator: Enrique Monte, University of Salamanca, 1999-2002, 1.676.825 €.
7. AIR3-CT94-1322 “The development of rapid diagnostic methods for the detection of *Colletotrichum* species pathogenic to strawberry plants in Europe”. Project **RTD EU 3FP**. Coordinator: Enrique Monte, University of Salamanca, 1994-1998. 809.500 Ecu.

### C.3. Contratos (*cinco más destacados*)

1. “Estudio de análisis de la expresión génica de muestras de plantas de tomate”. PI: Carlos Nicolás, Art 83 contract **BASF**-University of Salamanca, 2013-2014, 50.919 €.
2. “Mejora de la eficacia de los elementos fertilizantes” PI: Enrique Monte, Art 83 contract **MIRAT Fertilizers** (CDTI project)-University of Salamanca, 2010-2012, 102.954 €.
3. “Redacción del Plan Director de lucha contra plagas de Castilla y León”. PI: Felix Torres, Art 83 contract **Instituto Tecnológico Agrario de Castilla y León/Consejería de Agricultura**-University of Salamanca 2008-2010. 51.500 €.
4. “Molecular identification and phylogenetic study of *Trichoderma harzianum* Rifai strains notified for registration as fungicidal active matter at the EU Registration Office (RMS, Sweden)”. PI: Enrique Monte, Art 83 contract “**The *Trichoderma harzianum* Task Force**” (**The Netherlands, Italy and Spain**)-University of Salamanca. 2005. 1.670 €.
5. “Royalties of the patent 9502266”. PI: Enrique Monte, Art 83 contract **Newbiotechnic S.A.**-University of Salamanca, 1999-2017. Variable, depending on the sales.

### C.4. Patentes (*cinco más destacadas*)

1. Hermosa, R., Grondona, M.I., Llobell, A. and Monte E. **US 6890530 B2**. Composition comprising fungi of Genus *Trichoderma* used as biological control agents and the applications thereof. Priority countries: USA; priority date: 9-9-2004; patent date: 10-5-2005. Holders: NBT and University of Salamanca. Exploited by: NBT.
2. Suárez, B., Rey M., Monte, E. and Llobell, A. **PCT/ES01/00471**. Enzyme with proteolytic activity. Priority countries: PCT treaty; priority date: 1-12-2000; patent date: 6-6-2002. Holders: NBT, University of Salamanca and University of Seville. Exploited by: NBT.
3. Hermosa, R., Grondona, M.I., Llobell, A. and Monte E. **PCT/ES01/00166**. Composition comprising fungi of Genus *Trichoderma* used as biological control agents and the applications thereof. Priority countries: PCT treaty; priority date: 28-4-2000; patent date: 15-11-2001. Holders: NBT and University of Salamanca. Exploited by: NBT.
4. Montero, M., Rey M., Monte, E. y Llobell, A. **PCT/ES00/00293**. Enzymes with beta-(1,6)-endoglucanase activity. Priority countries: PCT treaty; priority date: 31.7-1999; patent date: 8-2-2001. Holders: NBT, University of Salamanca and University of Seville. Exploited by: NBT.

5. Rey, M., Soler, A., Ait Lahsen, H., De la Cruz, J., Monte, E. y Llobell, A. **EP-1207197-A1**. Antifungic compositions and method for controlling fungi. Priority countries: Europe; priority date: 31-7-1999. Holders: NBT and University of Seville. Exploited by: NBT.

### **C.5. Participación en paneles de evaluación (5 últimos años)**

- 2010 - today AVAP (Comunidad Valenciana)  
2008 - today AAC (Agencia Andaluza del Conocimiento)  
2005 - today Reviewer of 65 scientific journals (PLOS Pathogens, Plant Cell, Plant Physiology, BMC Genomics, Current Microbiology, Genome Biology and Evolution, Molecular Plant Pathology, Journal of Experimental Botany, Frontiers in Microbiology, Molecular Plant-Microbe Interactions, Applied and Environmental Microbiology, Scientific Reports, etc)  
1999- today ANEP

### **C.6. Participación en Comités Internacionales (5 últimos años)**

- 2016 Czech Science Foundation GACR (Czech Republic)  
2016 National Science Centre NCN (Poland)  
2014 Swedish University of Agricultural Sciences (Sweden)  
2014 Comisión Nacional de Investigación Científica y Tecnológica CONICYT (Chile)  
2014 - today National Center of Science and Technology NCST (Kazakhstan)  
2013 Biotechnology and Biological Sciences Research Council BBSRC (UK)  
2012 - today Ministero dell'Istruzione, dell'Università e della Ricerca MIUR (Italy)  
2005 - today Agencia Nacional de Promoción Científica y tecnológica FONCYT (Argentina)

### **C.7. Organización de actividades científicas (5 últimos años)**

- 2018 Chair of the Organizing Committee of the 15<sup>th</sup> International *Trichoderma* & *Gliocladium* Workshop (TG2018), Salamanca, June 10-13, 2018  
2016 Member of the Organizing Committee of the International Congress Biolberoamérica, Salamanca, June 5-8, 2016  
2014 Member of the Organizing Committee of the 5<sup>th</sup> National Congress of Microbial Biotechnology (CMIBM'14), Oviedo, October 15-17, 2014

### **C.8. Premios científicos y becas competitivas**

- 2015 *Maria de Maeztu Prize* to the scientific excellence, given by the University of Salamanca  
2013 *Salamanca Ambassador Prize 2012*, given by the Salamanca Convention Bureau from the Salamanca City Council  
2007 *Fleming Prize* of the Spanish Society for Microbiology  
2000 *Mecenas Prize* from the Social Council of the University of Salamanca  
1999 *Severo Ochoa Prize* from the Prince of Asturias Foundation (Oviedo, Spain) for the research of my group on methyl bromide alternatives in strawberry  
1998 Badge of Honor of the Spanish Society for Phytopathology  
1988-1989 *Fleming-British Council scholarship* in the International Mycological Institute (Kew, UK)  
1987 *Cañada Blanch-British Council scholarship* in the International Mycological Institute (Kew, UK)  
1986 *PhD Outstanding Prize* (Premio Extraordinario) for the best doctorate student of the Faculty of Pharmacy from the University of Salamanca

