

# Jean-Philippe COMBIER

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## EXPERIENCE

- 2017-2025 **CNRS Research Director:** Biology of peptides and small RNAs  
Creation and Head of “Peptides and Small RNAs” team  
Laboratoire de Recherche en Sciences Végétales, Auzeville-Tolosane, France
- 2016-2025 **Co-Founder and Scientific Advisor,**  
Micropep Technologies, Auzeville-Tolosane, France
- 2018-2019 **Co-Founder and Scientific Advisor,**  
MiPEPid, Auzeville-Tolosane, France
- 2009-2015 **CNRS Researcher:** Regulation of microRNAs expression  
Laboratoire de Recherche en Sciences Végétales, Auzeville-Tolosane, France
- 2007-2009 **Post-Doctoral position:** Role of SHP2 mutations in LEOPARD and Noonan syndromes.  
INSERM U563, Toulouse, France.
- 2004-2006 **Post-Doctoral position:** Characterisation of regulators of root nodule symbiosis.  
Laboratoire des Interactions Plantes-Microorganismes, Auzeville-Tolosane, France
- 2001-2004 **Ph.D.:** Identification and characterisation of non-mycorrhizal mutants.  
Laboratoire d'Ecologie Microbienne, Villeurbanne, France

## DIPLOMAS

- 2016 **HDR** University of Toulouse, France  
(Habilitation à diriger des Recherches)
- 2004 **Ph.D.** University of Lyon, France  
Microbial Ecology

## PUBLICATIONS (n = 42, h factor: 28, sum of times cited: 4834)

- Ormanecy M, Guillotin B, Ribeyre C, Medina C, Jariais N, San Clemente H, Thuleau P, Plaza S, Beck M, **Combier JP**. Immune-enhancing miPEPs reduce plant diseases and offer new solutions in agriculture. **Plant Biotech J**. 2024. 22:13.
- Ormanecy M, Guillotin B, Merret R, Camborde L, Duboé C, Fabre B, Pouzet C, Impens F, Van Haver D, Carpentier MC, San Clemente H, Aguilar M, Lauressergues D, Scharff L, Pichereaux C, Burlet-Schiltz O, Bousquet-Antonelli C, Gevaert K, Thuleau P, Plaza S, **Combier JP**. Complementary peptides represent a credible alternative to agrochemicals by activating translation of targeted proteins. **Nature Communications**. 2023. 14:254.
- Lauressergues D, Ormanecy M, Guillotin B, San Clemente H, Camborde L, Duboé C, Tourneur S, Carpentier P, Barozet A, Jauneau A, Le Ru A, Thuleau P, Gervais V, Plaza S, **Combier JP**. Characterization of plant microRNA-encoded peptides (miPEPs) reveals molecular mechanisms from the translation to activity and specificity. **Cell Reports**. 2022. 38:110339.
- Ormanecy M, Guillotin B, San Clemente H, Thuleau P, Plaza S, **Combier JP**. Use of microRNA-encoded peptides to improve agronomic traits. **Plant Biotech J**. 2021. 19:1687-1689.
- Montigny A, Tavormina P, Duboe C, San Clément H, Aguilar A, Valenti P, Lauressergues D, **Combier JP** and Plaza S. Drosophila primary microRNA-8 encodes a microRNA-encoded peptide acting in parallel of miR-8. **Genome Biology**. 2021. 22:118.
- Couzigou JM, Lauressergues D, André O, Gutjahr C, Guillotin B, Bécard G, **Combier JP**. Positive gene regulation by a natural protective miRNA enables Arbuscular Mycorrhizal Symbiosis. **Cell, Host and Microbe**. 2017. 21:106-112.

7. M, **Combier JP**. Use of microRNA-encoded peptide miPEP172c to stimulate nodulation in soybean. **New Phytologist**. 2016. 211:379-381.
8. Lauressergues D, Couzigou JM, San Clemente H, Martinez Y, Dunand C, Bécard G, **Combier JP**. Primary transcripts of microRNAs encode regulatory peptides. **Nature**. 2015. 520:90-3.
9. **Combier JP**, de Billy F, Gamas P, Niebel A and Rivas S. Trans-regulation of the expression of the transcription factor MtHAP2-1 by a uORF controls root nodule development. **Genes and Development**. 2008. 22:1549-1559.
10. **Combier JP**, Frugier F, de Billy F, Boualem A, El Yahyaoui F, Moreau S, Vernié T, Ott T, Gamas P, Crespi M and Niebel A. *MtHAP2-1* is a key transcriptional regulator of symbiotic nodule development regulated by microRNA169 in *Medicago truncatula*. **Genes and Development**. 2006. 20:3084-3088.

### **VALORIZATION:**

16 Patents

Creation of two companies:

Micropep Technologies: 2016-2025: Co-Founder and scientific advisor

MiPEPid: 2018-2019: Co-Founder and scientific advisor

### **41 INVITED CONGRESSES AND SEMINARS**

### **POPULARIZATION/MEDIA:**

12 articles in written press, 2 interview for TV, 2 for radio

### **25 GRANTS since 2011 (3600 k€)**

### **AWARDS**

2020: Trophée de la valorisation de la recherche, Occitanie

2016: Bronze medal of CNRS

### **MANAGEMENT**

6 Post-Doc (21 years)

4 PhD

4 Technical assistant (19 years)

7 Master II

1 Master I