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Laboratory: IRHS 'Research Institute of Horticulture and Seeds'
SMS team 'Source and sink Metabolism and Stress responses'



Projects

Involvement of the dual-affinity nitrate transporter MtNPF6.8 of *Medicago truncatula* in the control of primary root growth, a key step in post-germination growth and seedling establishment (See also the SMS team page).

Scientific Career

- 1992: **PhD** in Biology, University of Orsay, Paris XI (France).
- 1992: **Graduate teaching assistant** (ATER), Lab. of Plant Molecular Biology University of Orsay, Paris XI (France).
- 1993: **Graduate teaching assistant** (ATER), Lab. of Plant Molecular Physiology University of Orsay, Paris XI (France).
- 1993: **Associate professor** in Genetic, University of Angers.

Publications

- 29- **Morère-Le Paven M.C.**, Clochard T., Limami A.M. (2024) NPF and NRT2 from *Pisum sativum* potentially involved in nodule functioning: Lessons from *Medicago truncatula* and *Lotus japonicus*. *Plants* 13: 322.
- 28- Tarkowski Ł.P., Clochard T., Blein-Nicolas M., Zivy M., Baillau T., Abadie C., **Morère-Le Paven M.C.**, Limami A.M., Tcherkez G., Montrichard F. (2023) The nitrate transporter-sensor MtNPF6.8 regulates the branched chain amino acid/pantothenate metabolic pathway in barrel medic (*Medicago truncatula* Gaertn.) root tip. *Plant Physiology and Biochemistry* 206: 108213.
- 27- Boeglin L., **Morère-Le Paven M.C.**, Clochard T., Fustec J., Limami A.M. (2022) *Pisum sativum* response to nitrate as affected by *Rhizobium leguminosarum*-derived signals. *Plants* 11: 1966.
- 26- Zang L., Tarkowski L.P., **Morère-Le Paven M.C.**, Zivy M., Baillau T., Clochard T., Bahut M., Balzergue S., Pelletier S., Landès C., Limami A.M., Montrichard F. (2022) The nitrate transporter MtNPF6.8 is a master sensor of nitrate signal in the primary root tip of *Medicago truncatula*. *Frontiers in Plant Sciences* 13: 832246.

- 25- Zang L., **Morère-Le Paven M.C.**, Clochard T., Porcher A., Satour P., Mojović M., Vidović M., Limami A.M., Montrichard F. (2020). Nitrate inhibits primary root growth by reducing accumulation of reactive oxygen species in the root tip in *Medicago truncatula*. *Plant Physiology and Biochemistry* 146: 363-373.
- 24- Limami A.M., **Morère-Le Paven M.C.** (2020). Nitrate signaling pathway via the transporter MtNPF6.8 involves abscisic acid for the regulation of primary root elongation in *Medicago truncatula*. In *The model of legume Medicago truncatula* (Ed: de Bruijn FJ), Wiley Blackwell, 117-124.
- 23- Philippe F., Verdu I., **Morère-Le Paven M.C.**, Limami A.M., Planchet E. (2019). Involvement of *Medicago truncatula* glutamate receptor-like channels in nitric oxide production under short-term water deficit stress. *Journal of Plant Physiology*: 236: 1-6.
- 22- Pellizzaro A., Alibert B., Planchet E., Limami A.M., **Morère-Le Paven M.C.** (2017). Nitrate transporters: an overview in legumes. *Planta* 246: 585-595.
- 21- Pellizzaro A., Clochard T., Planchet E., Limami A.M., **Morère-Le Paven M.C.** (2015). Identification and molecular characterization of *Medicago truncatula* NRT2 and NAR2 families. *Physiologia Plantarum* 154: 256-269.
- 20- Chentli A., Gillmann L., Bouazza L., Medjkal S., Limami A.M., **Morère-Le Paven M.C.**, Bousseboua H. (2014). Effects of secondary compounds from cactus and acacias trees on rumen microbial profile changes performed by Real-Time PCR. *International Journal of Advanced Research* 2: 660-671.
- 19- Pellizzaro A., Clochard T., Cukier C., Juchaux M., Montrichard F., Planchet E., Limami A.M., **Morère-Le Paven M.C.** (2014). The nitrate transporter MtNPF6.8 (MtNRT1.3) transports abscisic acid and mediates nitrate regulation of primary root growth in *Medicago truncatula*. *Plant Physiology* 166: 2152-2165.
- 18- Planchet E., Verdu I., Delahaie J., Cukier C., Girard C., **Morère-Le Paven M.C.**, Limami A.M. (2014). Abscisic acid-induced nitric oxide and proline accumulation in independent pathways under water deficit stress during seedling establishment in *Medicago truncatula*. *Journal of Experimental Botany* 65: 2161-2170.
- 17- **Morère-Le Paven M.C.**, Viau L., Hamon A., Vandecasteele C., Pellizzaro A., Bourdin C., Laffont C., Lapiet B., Lepetit M., Frugier F., Legros C., Limami A.M. (2011). Characterization of a dual-affinity nitrate transporter MtNRT1.3 in the model legume *Medicago truncatula*. *Journal of Experimental Botany* 62: 5595–5605.
- 16- Vandecasteele C., Teulat-Merah B., **Morère-Le Paven M.C.**, Leprince O., Ly Vu B., Viau L., Ledroit L., Pelletier S., Payet N., Satour P., Lebras C., Gallardo K., Huguet T., Limami A., Prospero J.M. and Buitink J. (2011). QTL analysis reveals a correlation between the ratio of sucrose/raffinose family oligosaccharides and seed vigour in *Medicago truncatula*. *Plant, Cell and Environment* 34: 1473-1487.

- 15- Teulat-Merah B., **Morère-Le Paven M.C.**, Ricoult C., Aubry C. and Peltier D. (2011). cDNA-AFLP profiling in embryonic axes during the germination time-course has allowed to identify mRNAs associated with early radicle growth in common bean. *Biologia Plantarum* 55: 437-447.
- 14- **Morère-Le Paven M.C.**, Anzala F., Recton A. and Limami A.M. (2007). Differential transcription initiation and alternative RNA splicing of *Knox7* a class 2 homeobox gene of maize. *Gene* 401: 71-79.
- 13- Anzala F., **Morère-Le Paven M.C.** and Limami M.A. (2007). Activité *in vivo* de l'aspartate kinase. Etude par suivi isotopique (¹⁵N). *L'Actualité Chimique* 305: 17-20.
- 12- Anzala F., **Morère-Le Paven M.C.**, Touchard C., Giauffret C. and Limami A.M. (2006). QTL mapping and genetic analysis of inhibitory effect of lysine on germination and postgermination growth of Maize. *Acta Agronomica Hungarica* 54: 271-279.
- 11- Anzala F. **Morère-Le Paven M.C.**, Fournier S., Rondeau D. and Limami A.M. (2006). Physiological and molecular aspects of aspartate-derived amino acid metabolism during germination and post-germination growth in two maize genotypes differing in germination efficiency. *Journal of Experimental Botany* 57: 645-653.
- 10- Aubry C., **Morère-Le Paven M.C.**, Chateigner-Boutin A.L., Teulat-Merah B., Ricoult C., Peltier D., Jalouzot R. and Limami A.M. (2003). A gene encoding a germin-like protein, identified by a cDNA-AFLP approach, is specifically expressed during germination of *Phaseolus vulgaris*. *Planta* 217: 466-475.
- 9- Chateigner-Boutin A.L., Aubry C., **Morère-Le Paven M.C.** and Jalouzot R. (2003). Molecular cloning and expression of a gene encoding a Germin-like Protein in common bean (*Phaseolus vulgaris* L.). CABI Publishing, The Biology of Seeds: Recent Research Advances, pp131-140.
- 8- Delumeau O., **Morère-Le Paven M.C.**, Montrichard F. and Laval-Martin D.L. (2000). Effects of short-term NaCl stress on calmodulin transcript levels and calmodulin-dependent NAD kinase activity in two species of tomato. *Plant, Cell and Environment* 23: 329-336.
- 7- **Morère-Le Paven M.C.**, Montrichard F., Lucet I., Jalouzot R. and Laval-Martin D.L., (1997/98). NAD⁺ kinase activities in *Euglena gracilis* and *Phaseolus vulgaris*. *Biologia Plantarum* 40: 565-574.
- 6- Poupard P., **Morère-Le Paven M.C.**, Laval-Martin D. and Jalouzot R. (1995). NaCl and wounding induced changes in NAD reductase in hypocotyls and root tips of *Phaseolus vulgaris* L. *Biologia Plantarum* 37: 597-604.
- 5- **Morère-Le Paven M.C.**, De Buyser J., Henry Y., Hartmann C. and Rode A. (1994). Unusual inheritance of the mitochondrial genome organization in the progeny of reciprocal crosses between alloplasmic hexaploid wheat regenerants. *Theoretical and Applied Genetics* 89: 572-576.
- 4- Hartmann C., Henry Y., De Buyser J., **Morère-Le Paven M.C.**, Corre F., Takvorian A. and Rode A. (1993). L'organisation du génome mitochondrial représente un marqueur de l'aptitude à la

régénération chez les cultures *in vitro* issues d'explants somatiques de blé tendre. *Acta Botanica Gallica* 140: 719-719.

- 3- **Morère-Le Paven M.C.**, De Buyser J., Henry Y., Corre F., Hartmann C. and Rode A. (1992). Multiple pattern of mtDNA reorganization in plants regenerated from different *in vitro* cultured explants of a single wheat variety. *Theoretical and Applied Genetics* 85: 9-14.
- 2- **Morère-Le Paven M.C.**, Henry Y., De Buyser J., Corre F., Hartmann C. and Rode A. (1992). Organ/tissue-specific changes in the mitochondrial genome organization of *in vitro* cultures derived from different explants of a single wheat variety. *Theoretical and Applied Genetics* 85: 1-8.
- 1- Hartmann C., De Buyser J., Henry Y., **Morère-Le Paven M.C.**, Dyer T.A. and Rode A. (1992). Nuclear genes control changes in the organization of the mitochondrial genome in tissue cultures derived from immature embryos of wheat. *Current Genetics* 21: 515-520.