



Ludovic Bassié

Associate professor

Personal Information



Position: Associate professor

Area of expertise: Biotechnology

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University degrees

- Degree in Biology, University of Nice-Sophia Antipolis, France, 1997
- PhD in Plant Biotechnology, University of Barcelona, Spain, 2004

Previous activities

- 1998 - 2001. Research assistant, John Innes Centre (UK)
- 2002 - 2004. Research assistant, Fraunhofer Institute (Germany)
- 2004 - 2007. Postdoctoral researcher, Juan de la Cierva, University of Lleida, UdL (Spain)
- 2007 - 2011. Lecturer/ assistant professor, UdL
- 2011 - present. Associate professor, UdL

Research

- Metabolic pathway engineering in cereals.

Teaching

- PLANT BIOTECHNOLOGY Degree in Biotechnology
- LABORATORY TECHNIQUES IN PLANT BIOTECHNOLOGY Degree in Biotechnology



Recent Publications

Castaño C, Bassie L, Oliach D, Gómez M, Medina V, Liu B, Colinas C. 2015. Cryphonectria hypovirus 1 (CHV-1) survey reveals low occurrence and diversity of subtypes in NE Spain. *Forest Pathology* 45:51-59

Zorrilla-López U, Masip G, Arjó G, Bai C, Banakar R, Bassie L, Berman J, Farre G, Miralpeix B, Pérez-Massot E, Sabalza M, Sanahuja G, Vamvaka E, Twyman R, Christou P, Zhu C, Capell T. 2013. Engineering metabolic pathways in plants by multigene transformation. *The International Journal of Developmental Biology* 57: 565-576.

Sanahuja G, Farre G, Bassie L, Zhu C, Christou P, Capell T. 2013. Ascorbic acid synthesis and metabolism in maize are subject to complex and genotype-dependent feedback regulation during endosperm development. *Biotechnology Journal* 8: 122-1230

Berman J, Zhu C, Perez-Massot E, Arjo G, Zorrilla-Lopez U, Masip G, Banakar R, Sanahuja G, Farre G, Miralpeix B, Bai C, Vamvaka E, Sabalza M, Twyman RT, Bassie L, Capell T, Christou P. 2013. Can the world afford to ignore biotechnology solutions that address food insecurity? *Plant Molecular Biology* 83: 5-19

Zhu C, Sanahuja G, Yuan D, Farré G, Arjó G, Berman J, Zorrilla-López U, Banakar R, Bai C, Pérez-Massot E, Bassie L, Capell T, Christou P. 2013. Biofortification of plants with altered antioxidant content and composition: genetic engineering strategies. *Plant Biotechnology Journal* 11: 129-141

Pérez-Massot E, Banakar R, Gómez-Galera S, Zorrilla-López U, Sanahuja G, Arjó G, Miralpeix B, Vamvaka E, Farre G, Rivera SM, Dashevskaya S, Berman J, Sabalza M, Yuan D, Bai C, Bassie L, Twyman RM, Capell T, Christou P, Zhu C. 2013. The contribution of transgenic plants to better health through improved nutrition: opportunities and constraints. *Genes And Nutrition* 8: 29-41

Yuan D., Bassie L., Sabalza M., Miralpeix B., Dashevskaya S., Farre G., Rivera S., Banakar R., Bai C., Sanahuja G., Arjo G., Avilla E., Zorrilla-Lopez U., Ugidos-Damboriena N., Lopez A., Almacellas D., Zhu C., Capell T., Hahne G., Twyman R., Christou P. 2011. The potential impact of plant biotechnology on the Millennium Development Goals. *Plant Cell Reports* 30(3):249-65

Peremarti A., Twyman R., Gomez-Galera S., Naqvi S., Farre G., Sabalza M., Miralpeix B., Dashevskaya S., Yuan D., Ramessar K., Christou P., Zhu C., Bassie L., Capell T. 2010. Promoter diversity in multigene transformation. *Plant Molecular Biology* 73:363-378

Peremarti A., Bassie L., Yuan D., Pelacho A., Christou P., Capell T. 2010. Transcriptional regulation of the rice arginine decarboxylase (*Adc1*) and S-adenosylmethionine decarboxylase (*Samdc*) genes by methyl jasmonate. *Plant Physiology* 48: 553 - 559



Peremarti A., Bassie L., Zhu C., Christou P., Capell T. 2010. Molecular characterization of the Arginine decarboxylase gene in rice. *Transgenic Research* 19:785-797

Naqvi S., Zhu C., Farre G., Ramessar K., Bassie L., Breitenbach J., Perez Conesa D., Ros G., Sandmann G., Capell T., Christou P. 2009. Transgenic multivitamin corn through biofortification of endosperm with three vitamins representing three distinct metabolic pathways. *Proceedings of the National Academy of Sciences of the United States of America* 106;7762-7767

Bassie L., Zhu C., Romagosa I., Christou P., Capell T. 2008. Transgenic wheat plants expressing an oat arginine decarboxylase cDNA exhibit increases in polyamine content in vegetative tissue and seeds. *Molecular Breeding* 22 : 39 - 50

Capell T., Zhu C., Bassie L., Peremarti A., Naqvi S., Ramessar R., Gomez G., Christou P. 2007. Background, Current Status and Future Prospects of Transgenic Crop Plant Development. *Contributions to Science* 3 (4) : 531 - 538

Capell T., Bassie L. 2005. Progress in the modulation of the polyamine biosynthetic pathway in transgenic rice. *Journal of Biological Sciences* 5: 379-390.

Capell T., Bassie L., Christou P. 2004. Modulation of the polyamine biosynthetic pathway in transgenic rice confers tolerance to drought stress. *PNAS of USA* 101: 9909-9914.

Capell T., Claparols I., DelDuca S., Bassie L., Miro B., Rodriguez-Montesinos J., Christou P., Serafini-Fracassini D. 2004. Producing transglutaminases by molecular farming in plants. *Amino Acids* 26: 419-423.

Claparols I., Bassie L., Miro B., Del Duca S., Rodriguez-Montesinos J., Christou P., Serafini-Fracassini D., Capell T. 2004. Transgenic rice as a vehicle for the production of the industrial enzyme transglutaminase. *Transgenic Research* 13: 195-199.

Trung-Nghia P., Bassie L., Safwat G., Lepri O., Thu-Hang P., Rocha P., Christou P., Capell T. 2003. Reduction in the endogenous arginine decarboxylase transcript levels in rice leads to depletion of the putrescine and spermidine pools with no concomitant changes in the expression of downstream genes in the polyamine biosynthetic pathway. *Planta* 218: 125-134.

Thu-Hang P., Sawfat G., Bassie L., Trung-Nghia P., Christou P., Capell T. 2002. Expression of a heterologous S-adenosylmethionine decarboxylase cDNA in plants demonstrates that changes in SAMDC activity determine levels of the higher polyamines spermidine and spermine. *Plant Physiology* 129: 1744-1754.

Lepri O., Bassie L., Thu-Hang P., Christou P., Capell T. 2002. Endogenous enzyme activities and polyamine levels in diverse rice cultivars depend on genetic background and are not affected by the presence of hygromycin phosphotransferase selectable marker. *Theoretical and Applied Genetics* 105: 594-603.

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Sivamani E., Bassie L., Christou P., Capellm T. 2001. Development of a novel gene transfer system for *Cajanus*



cajan and expression of a monocot arginine decarboxylase cDNA in transformed cell lines. *Plant Physiology and Biochemistry* 39: 575 - 582 .

Capell T., Bassie L., Topsom L., Hitchin E., Christou P. 2000. Simultaneous reduction of the activity of two related enzymes, involved in early steps of the polyamine biosynthetic pathway, by a single antisense cDNA in transgenic rice. *Molecular Genetics and Genomics* 264: 470-476.

Bassie L., Noury M., Wisnieski J.P., Topsom L., Christou P., Capell T. 2000. Transgenic cell lines as a useful tool to study the biochemistry of down-regulation of an endogenous rice gene using a heterologous diamine oxidase cDNA. *Plant Physiology and Biochemistry* 38: 729-737.

Capell T., Lepri O., Bassie L., Trung-Nghia P., Thu-Hang P., Safwat G., Christou P. 2000. Elucidation of the relative contribution of the two alternative pathways for polyamine biogenesis in plants suggests a key role for the putrescine pool in controlling flux to the higher polyamines. *Rice Genetics Newsletter* 17: 156-157.

Noury M., Bassie L., Lepri O., Kureck I., Christou P., Capell T. 2000. A transgenic rice cell lineage expressing the oat arginine decarboxylase(adc) cDNA constitutively accumulates putrescine in callus and seeds but not in vegetative tissues. *Plant Molecular Biology* 43: 537-544.

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