

## SHORT RESUME

### Dr. Jenny RENAUT

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Born on 25 August 1975 in Tournai, Belgium

Dr Jenny RENAUT is leading the proteomic platform of the Department 'Environment and Agro-biotechnologies' of the CRP-Gabriel Lippmann, Luxembourg.

Her scientific fields of interest are proteomics in relation with plant responses to environmental constraints and development of new protocols and techniques in proteomics. She has a general education in plant biology and received her PhD in plant science at the Catholic University of Louvain-la-Neuve in Belgium ('Responses of poplar (*Populus tremula* L. x *P. tremuloides* Michx.) to low non-freezing temperatures: proteomic and physiological aspects, November 4th, 2003).

In December 2003, Dr Renaut was hired as junior scientist at the CRP – Gabriel Lippmann to complete work on national and European projects and to set-up a proteomic platform in-house, still working on plants and abiotic stresses. Since 2006, Dr Renaut is responsible of the proteomics platform of the CRP-Gabriel Lippmann, proposing scientific and technical support for projects inside the department but also collaborations and services with other teams (involving research on human, animals, microorganisms and so on). She has numerous international collaborations with laboratories in Europe, Japan, South Korea and the US. She has been involved in several Luxembourg, EU and International funded projects. Since May 2007, she is also chairwoman of the COST action FA0603 Plant Proteomics in Europe (<http://www.costfa0603.org/>).

#### International responsibilities:

- Chairwoman of the COST action FA0603 Plant Proteomics in Europe (<http://www.costfa0603.org/>)
- Vice-Chairman (2005-2007) of the Belgian Plant Tissue Culture Group.
- Referee of various international journals, among which 'Proteomics', 'Journal of Proteome Research', 'The Plant Journal', 'Physiologia Plantarum', 'Plant Physiology and Biochemistry', 'Scientia Horticulturae', 'Journal of Proteomics' and 'Journal of Plant Physiology'
- Chairwoman of the organizing committee of the Proteom'Lux since 2004. (<http://proteomlux.lippmann.lu>; <http://proteomlux2008.lippmann.lu>; <http://proteomlux2006.lippmann.lu>)
- Member of the International Advisory committee for the 8th International Plant Cold Hardiness Seminar conference in Saskatchewan, Canada. Co-Chair of the 9<sup>th</sup> IPCHS, in Luxembourg, 2011.
- Member of the Editorial Board of 'Journal of Proteomics'
- Member of the ESF 'Pool of Reviewers'

#### Publications:

1. RENAUT J., S. LUTTS, L. HOFFMANN and J.F. HAUSMAN (2004) Responses of poplar to chilling temperatures: proteomic and physiological aspects. *Plant Biol.* 6: 81-90.
2. RENAUT J., L. HOFFMANN and J.F. HAUSMAN (2005) Biochemical and physiological mechanisms related to cold acclimation and enhanced freezing tolerance in poplar plantlets. *Physiologia Plantarum* 125: 82-94.
3. RENAUT J., HAUSMAN J.F. AND WISNIEWSKI M.E. (2006) Proteomics and low temperature studies: Bridging the gap between gene expression and metabolism (review). *Physiologia Plantarum* 126: 97-109.
4. WISNIEWSKI M.E., C.L. BASSETT, J. RENAUT, R. FARRELL JR., T. TWOROSKI AND T.S. ARTLIP (2006) Differential regulation of two dehydrins from peach (*Prunus persica* L. Batsch) by photoperiod, low temperature, and water deficit. *Tree Physiology* 26: 575-584.
5. BASSETT C.L., M.E. WISNIEWSKI, T.S. ARTLIP, J.L. NORELLI, J. RENAUT AND R.E. FARRELL JR. (2006) Global analysis of genes regulated by low temperature and photoperiod in peach bark. *Journal of the American Society of Horticultural Science* 131: 551-563.

6. BOGEAT-TRIBOULOT M.B.\*, M. BROSCHÉ\*, J. RENAUT\*, L. JOUVE\*, D. LE THIEC, P. FAYYAZ, B. VINOUCUR, E. WITTERS, K. LAUKENS, T. TEICHMANN, A. ALTMAN, J.-F. HAUSMAN, A. POLLE, J. KANGASJARVI AND E. DREYER (2007) An integrative approach of drought stress impact in a poplar growing in arid zones: from gene expression to ecophysiology and plant performance. *Plant Physiology* 143: 876-892 (\*4 first authors with equal contribution).
7. BOHLER, S., M. BAGARD, M. OUFIR, S. PLANCHON, L. HOFFMANN, Y. JOLIVET, J.F. HAUSMAN, P. DIZENGREMEL AND J. RENAUT (2007) A DiGE analysis of developing poplar leaves subjected to ozone reveals major changes in carbon metabolism. *Proteomics* (7) 10:1584-1599.
8. BILLING, A.M., FACK, F., RENAUT, J., OLINGER, C.M., SCHOTE, A.B., TURNER, J.D., MULLER, C.P. (2007) Proteomic Analysis of the Cortisol Mediated Stress Response in THP-1 Monocytes using DIGE Technology. *Journal of Mass Spectrometry* 42: 1433-1444.
9. AHSAN, N., LEE D.-G., LEE, S.-H., KANG, K.Y., BAHK, J.D. , CHOI, M.S., LEE, I.-J., RENAUT, J. AND LEE, B.-H. (2007) A comparative proteomic analysis of tomato leaves in response to waterlogging stress. *Physiologia Plantarum* 131: 555-570.
10. KIEFFER, P., DOMMES, J., HOFFMANN, L., HAUSMAN, J.-F., RENAUT, J. (2008) Quantitative changes in protein expression of cadmium-exposed poplar plants. *Proteomics* 8: 2514-2530.
11. POIRRIER JE, GUILLONNEAU F, RENAUT J, SERGEANT K, LUXEN A, MAQUETAND P, LEPRINCE P. (2008) Proteomic changes in rat hippocampus and adrenals following short-term sleep deprivation. *Proteome Science* 6: 14 .
12. CARPENTIER, S.C., PANIS, B., VERTOMMEN, A., SWENNEN, R., SERGEANT, K., RENAUT, J., LAUKENS, K., WITTERS, E., SAMYN, B., DEVREESE B. (2008) Proteome analysis of non-model plants: a challenging but powerful approach. *Mass Spectrometry Reviews* 27: 354-377.
13. RENAUT J., J.F. HAUSMAN, C. BASSETT, T. ARTLIP, E. WITTERS, M. WISNIEWSKI (2008) Quantitative proteomic analysis of short photoperiod and low temperature responses in bark tissues of peach (*Prunus persica* L. Batsch). *Tree Genetics and Genomes* 4:589-600.
14. AHSAN, N., LEE D.-G., LEE, S.-H., KANG, K.Y., BAHK, J.D. , CHOI, M.S., LEE, I.-J., RENAUT, J. , LEE, B.-H. (2008) Comparative proteomic study of arsenic-induced differentially expressed proteins in rice roots reveals glutathione plays a central role during As stress. *Proteomics* 8:3561-3576.
15. LYNGBED R, RENAUT J, HAUSMAN J-F, IVERSEN T-H, HVOSLEF-EIDE AK. Embryo-specific proteins in *Cyclamen persicum* analysed with 2-D DIGE (2008) *Journal of Plant Growth Regulation* 24: 353-369.
16. OUFIR M., LEGAY S., NICOT N., VAN MOER K., HOFFMANN L., RENAUT J., HAUSMAN J.-F., EVERS D. (2008) Gene expression in potato during cold exposure: changes in carbohydrate and polyamine metabolisms. *Plant Science* 175: 839-852.
17. KIEFFER P., PLANCHON S., OUFIR M., ZIEBEL J., DOMMES J., HOFFMANN L., HAUSMAN JF, RENAUT J. (2008). Combining proteomics and metabolite analyses to unravel cadmium stress-response in poplar leaves. *Journal of Proteome Research* 8: 400-417.
18. DELAPLACE P., FAUCONNIER M.L., SERGEANT K., DIERICK J.F., OUFIR M., VAN DER WAL F., AMERICA A.H.P., RENAUT J., HAUSMAN J.F., DU JARDIN P. (2009) Potato (*Solanum tuberosum* L.) tuber ageing induces changes in the proteome and antioxidants associated with the sprouting pattern. *Journal of Experimental Botany* 60: 1273 - 1288.
19. KIEFFER P., SCHRÖDER P., DOMMES J., HOFFMANN L., RENAUT J., HAUSMAN J.-F. (2009) Proteomic and enzymatic response of poplar to cadmium stress. *Journal of Proteomics* 72: 379-396.
20. RENAUT J., BOHLER S., HAUSMAN J.-F., HOFFMANN L., SERGEANT K., JOLIVET Y., DIZENGREMEL P. (2009) The impact of atmospheric composition on plants. A case study of ozone and poplar. Invited Paper in *Mass Spectrometry Reviews* 28: 495-516

21. AHSAN N., RENAUT J., KOMATSU S. (2009) Recent development in the application of proteomics to the analysis of plant responses to heavy metals. *Proteomics* 9: 2602-2621
22. SERGEANT K., PINHEIRO C., HAUSMAN J.F., RICARDO C.P., RENAUT J. (2009) Taking advantage of non-specific trypsin cleavages for the identification of seed storage proteins in cereals. *Journal of Proteome Research* 8: 3182-3190
23. RENAUT J., PLANCHON S., OUFIR M., HAUSMAN J.F., HOFFMANN L., EVERS D. (2009) Chapter 27 Identification of Proteins From Potato leaves Submitted To Chilling Temperature, pp. 279-292, in *Plant Cold Hardiness: from the laboratory to the field*, in 'Plant Cold Acclimation', Ed. L. Gusta, M. Wisniewski and K. Tanino, CAB International Publishing.
24. CHAVES I., PINHEIRO C., PAIVA J.A.P., PLANCHON S., SERGEANT K., RENAUT J., GRAÇA J.A., COSTA G, COELHO A.V., RICARDO C.P.P. (2009) Proteomic evaluation of wound-healing processes in potato (*Solanum tuberosum* L.) tuber tissue. *Proteomics* 9: 4154-4175.
25. RÉNERT A.F., LEPRINCE P., DIEU M., RENAUT J., RAES M., BOURS V., CHAPELLE J.P., PIETTE J., MERVILLE M.P., FILLET M. (2009) The proapoptotic C16-ceramide-dependent pathway requires the death-promoting factor Btf in colon adenocarcinoma cells. *J Proteome Res.* 8: 4810-4822.
26. CARPENTIER S., RENAUT J. (2009) Recherche des marqueurs biologiques significatifs par analyses statistiques de données protéomiques. *Spectra Analyse* 270 : 40-45.
27. LASSERRE J.P., FACK F., REVETS D., PLANCHON S., RENAUT J., HOFFMANN L., GUTLEB A., MULLER C., BOHN T. (2009) Effects of the endocrine disruptors atrazine and PCB 153 on the protein expression of MCF-7 human cells. *Journal of Proteome Research* 8: 5485-5496
28. DURAND T., SERGEANT K., PLANCHON S., CARPIN S., LABEL P., MORABITO D., HAUSMAN J.-F., RENAUT J. (2010) Metal stress in poplar: Leaf and cambial proteome changes induced by Cd<sup>2+</sup> or Zn<sup>2+</sup> in *Populus tremula* x *P. alba* (717-1B4 genotype). *Proteomics* 10: 349-68
29. RENAUT J. (2010) Difference Gel Electrophoresis as a Tool to Discover Stress-Regulated Proteins in: *Methods in Molecular Biology*: 639, *Plant stress tolerance 1 Methods and protocols*, Ed. R. Sunkar, Chap. 12: 207-218. Humana Press, New York City, US.
30. PIETTE F, D'AMICO S, STRUVAY C, MAZZUCHELLI G, RENAUT J, TUTINO ML, DANCHIN A, LEPRINCE P, FELLER G. (2010) Proteomics of life at low temperatures: trigger factor is the primary chaperone in the Antarctic bacterium *Pseudoalteromonas haloplanktis* TAC125. *Mol Microbiol.* 76:120-132.
31. SERGEANT K, RENAUT J. (2010) Plant biotic stress and proteomics. *Current Proteomics* 7: 275-297.