Introduction to desiccation biology: from old borders to new frontiers.

Titre	Introduction to desiccation biology: from old borders to new frontiers.
Type de publication	Article de revue
Auteur	Leprince, Olivier [1], Buitink, Julia [2]
Pays	Allemagne
Editeur	Springer-Verlag
Ville	Berlin
Type	Article scientifique dans une revue à comité de lecture
Année	2015
Langue	Anglais
Date	2015 Aug
Numéro	2
Pagination	369-78
Volume	242
Titre de la revue	Planta : an international journal of plant biology
ISSN	1432-2048
Mots-clés	Anhydrobiosis [3], Arabidopsis [4], Artemia [5], Caenorhabditis [6], Craterostigma [7], Evolution [8], Heat shock factor [9], LEA proteins [10], Longevity [11], Oxidative Stress [12], Polypedilum [13], Seed [14], Transcriptome [15], Trebouxia Xerophyta [16], Ulva [17]

Résumé en anglais	MAIN CONCLUSION: A special issue reviews the recent progress made in our understanding of desiccation tolerance across various plant and animal kingdoms. It has been known for a long time that seeds can survive near absolute protoplasmic dehydration through air drying and complete germination upon rehydration because of their desiccation tolerance. This property is present both in prokaryotes and eukaryotes across all life kingdoms. These dry organisms suspend their metabolism when dry, are extremely tolerant to acute environmental stresses and are relatively stable during long periods of desiccation. Studies aiming at understanding the mechanisms of survival in the dry state have emerged during the past 40 years, moving from in vitro to genomic models and comparative genomics, and from a view that tolerance is an all-or-nothing phenomenon to a quantitative trait. With the prospect of global climate change, understanding the mechanisms of desiccation tolerance appears to be a promising avenue as a prelude to engineering crops for improved drought tolerance. Understanding desiccation is also useful for seed banks that rely on dehydration tolerance to preserve plant genetic resources in the form of these propagules. Articles in this special issue explore the recent progress in our understanding of desiccation tolerance, including the evolutionary mechanisms that have been adopted across various plant (algae, lichens, seeds, resurrection plants) and animal model systems (Caenorhabditis elegans, brine shrimp). We propose that the term desiccation biology defines the discipline dedicated to understand the desiccation tolerance in living organisms as well as the limits and time constraints thereof.
URL de la notice	http://okina.univ-angers.fr/publications/ua13893 [18]
DOI	10.1007/s00425-015-2357-6 [19]
Titre abrégé	Planta
Identifiant (ID) PubMed	26142353 [20]

Liens

[1] http://okina.univ-angers.fr/publications?f[author]=11839
[2] http://okina.univ-angers.fr/j.buitink/publications
[3] http://okina.univ-angers.fr/publications?f[keyword]=20217
[4] http://okina.univ-angers.fr/publications?f[keyword]=11796
[5] http://okina.univ-angers.fr/publications?f[keyword]=20218
[6] http://okina.univ-angers.fr/publications?f[keyword]=20219
[7] http://okina.univ-angers.fr/publications?f[keyword]=20220
[8] http://okina.univ-angers.fr/publications?f[keyword]=12136
[9] http://okina.univ-angers.fr/publications?f[keyword]=20221
[10] http://okina.univ-angers.fr/publications?f[keyword]=11842
[11] http://okina.univ-angers.fr/publications?f[keyword]=11848
[12] http://okina.univ-angers.fr/publications?f[keyword]=6203
[13] http://okina.univ-angers.fr/publications?f[keyword]=20222
[14] http://okina.univ-angers.fr/publications?f[keyword]=11839
[15] http://okina.univ-angers.fr/publications?f[keyword]=1656
[16] http://okina.univ-angers.fr/publications?f[keyword]=20224
[17] http://okina.univ-angers.fr/publications?f[keyword]=20223
[18] http://okina.univ-angers.fr/publications/ua13893
[19] http://dx.doi.org/10.1007/s00425-015-2357-6
[20] http://www.ncbi.nlm.nih.gov/pubmed/26142353?dopt=Abstract