



Developmental and stress-induced remodeling of cell-cell communication in the adrenal medullary tissue

Submitted by Emmanuel Lemoine on Tue, 02/24/2015 - 15:26

Titre	Developmental and stress-induced remodeling of cell-cell communication in the adrenal medullary tissue
Type de publication	Article de revue
Auteur	Guérineau, Nathalie C [1], Desarmenien, M. G [2]
Editeur	Springer Verlag
Type	Article scientifique dans une revue à comité de lecture
Année	2010
Langue	Anglais
Date	2010
Numéro	8
Pagination	1425 - 31
Volume	30
Titre de la revue	Cellular and Molecular Neurobiology
ISSN	1573-6830
Mots-clés	Adaptation, Physiological [3], Adrenal Medulla/cytology/growth & development [4], Animals [5], Cell Communication [6], Gap Junctions/metabolism [7], Humans [8], Stress, Physiological [9], Synaptic Transmission [10]
Résumé en anglais	<p>The adrenal medullary tissue contributes to maintain body homeostasis in reaction to stressful environmental changes via the release of catecholamines into the blood circulation in response to splanchnic nerve activation. Accordingly, chromaffin cell stimulus-secretion coupling undergoes temporally restricted periods of anatomo-functional remodeling in response to prevailing hormonal requirements of the organism. The postnatal development of the adrenal medulla and response to stress are remarkable physiological situations in which the stimulus- secretion coupling is critically affected. Catecholamine secretion from rat chromaffin cells is under a dual control involving an incoming initial command arising from the sympathetic nervous system that releases acetylcholine at the splanchnic nerve terminal-chromaffin cell synapses and a local gap junction-mediated intercellular communication. Interestingly, these two communication pathways are functionally interconnected within the gland and exhibit coordinated plasticity mechanisms. This article reviews the physiological and molecular evidence that the adrenal medullary tissue displays anatomical and functional adaptative remodeling of cell-cell communications upon physiological (postnatal development) and/or physiopathological (stress) situations associated with specific needs in circulating catecholamine levels.</p>
URL de la notice	http://okina.univ-angers.fr/publications/ua8213 [11]
DOI	10.1007/s10571-010-9583-z [12]
Lien vers le document	http://dx.doi.org/10.1007/s10571-010-9583-z [12]

Liens

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- [12] <http://dx.doi.org/10.1007/s10571-010-9583-z>

Publié sur *Okina* (<http://okina.univ-angers.fr>)