

Accepted Manuscript

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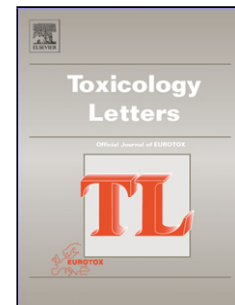
PII: S0378-4274(17)31442-X
DOI: <https://doi.org/10.1016/j.toxlet.2017.10.019>
Reference: TOXLET 9985

To appear in: *Toxicology Letters*

Received date: 27-3-2017
Revised date: 19-10-2017
Accepted date: 26-10-2017

Please cite this article as: Xu, Dan, Zhang, Chong, He, Xia, Guo, Zijing, Hu, Dongcai, Lu, Juan, Cheng, Siyuan, Wang, Hui, High expression of hippocampal glutamic acid decarboxylase 67 mediates hypersensitivity of the hypothalamic-pituitary-adrenal axis in response to prenatal caffeine exposure in rats. *Toxicology Letters* <https://doi.org/10.1016/j.toxlet.2017.10.019>

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High expression of hippocampal glutamic acid decarboxylase 67 mediates hypersensitivity of the hypothalamic-pituitary-adrenal axis in response to prenatal caffeine exposure in rats

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Conflicts of interest/disclosures

None.

Abbreviations: Adora2a, adenosine A2a receptor; ACTH, adrenocorticotrophic hormone; AVP, arginine vasopressin; α -CaMKII, Ca²⁺/calmodulin-dependent protein kinase II- α ; β -actin, Rattus norvegicus actin, beta; cAMP, cyclic adenosine monophosphate; CORT, corticosterone; CRH, corticotrophin-releasing hormone; DG, dentate gyrus; GAD65, glutamic acid decarboxylase 65; GAD67, glutamic acid decarboxylase 67; GC, glucocorticoid; HPA, hypothalamic-pituitary-adrenal; IUGR, intrauterine growth retardation; Mash1, mammalian achaete-scute homolog-1; Pax6, paired box 6; PCE, prenatal caffeine exposure; PSD95, post-synaptic density 95; PW, postnatal week 1; SPF, Specific Pathogen-Free; Tbr2, T-box brain protein 2; VGluT2, Vesicular glutamate transporter 2.

Highlights

- Caffeine induced a hypersensitivity of HPA axis in adult offspring rats.
- Caffeine increased the potential excitability of hypothalamus in offspring rats.
- Caffeine induced a high expression of hippocampal GAD67 in offspring rats.

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