The stress response HPA-axis hormone, glucocorticoid, reduces cellular SKA complex gene expression

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The stress response HPA-axis hormone, glucocorticoid, reduces cellular SKA complex gene expression

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Abstract

The Spindle- and Kinetochore-Associated (SKA) complex has been proven to be involved in many human mental behavioral disorders. Glucocorticoid, a hypothalamic-pituitary-adrenal (HPA) axis hormone, is a critical mediator of stress response in neurons. However, the underlying mechanisms of glucocorticoid's effects on human neuronal cells remain unclear. This study demonstrates that increased extracellular glucocorticoid levels significantly reduce neuronal cell SKA complex genes' expression levels, followed by altered neuronal cell viability and neurite development. The results suggest that the abnormality of this HPA-axis hormone could impact the neuronal cell functions through the alternation of SKA complex functions, which might induce cell death.

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