

Kansas State University Research Foundation TECHNOLOGY LICENSING PROFILE

GAPDH Knockdown Stable Cell Line

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Description:

One of the most investigated housekeeping proteins is Glyceraldehyde-3-phosphate dehydrogenase (GAPDH), which plays an important role across a diverse array of biological functions. GAPDH is widely used as an internal control in analysis of gene and protein expression levels. It is also a target of EHEC NleB1, and its glycosylation inhibits GAPDH interaction with TRAF2, which contributes to inhibiting NF-κB pathway activation.

Kansas State University researchers developed a GAPDH knockdown stable cell line to show that NleB/SseK orthologs have different acceptor substrate specificities. ShRNAs were synthesized and cloned into a mammalian expression vector. The plasmid was transfected into HEK 293T cells. Stable cell lines were created using puromycin selection.

Advantages:

• Can be used to elucidate the role of GAPDH across its diverse array of biological functions.

Applications:

- DNA damage and repair
- Apoptosis
- DNA replication
- Endocytosis

Publication: El Qaidi, S., Chen, K., Halim, A., Siukstaite, L., Rueter, C., & Hurtado-Guerrero, R. et al. (2017). NleB/SseK effectors from Citrobacter rodentium, Escherichia coli, and Salmonella enterica display distinct differences in host substrate specificity. *Journal Of Biological Chemistry*, 292(27), 11423-11430.

