

PRODUCT INFORMATION



Histone H3K27Me3 (21-44)-GK-biotin (trifluoroacetate salt)

Item No. 27767

Formal Name:	L-alanyl-L-threonyl-L-lysyl-L-alanyl-L-alanyl-L-arginyl-6-(trimethylammonio)-L-norleucyl-L-seryl-L-alanyl-L-prolyl-L-alanyl-L-threonylglycylglycyl-L-valyl-L-lysyl-L-lysyl-L-prolyl-L-histidyl-L-arginyl-L-tyrosyl-L-arginyl-L-prolylglycylglycyl-L-lysine-biotin, trifluoroacetate salt	H—Ala—Thr—Lys—Ala—Ala—Arg—Lys(Me3)—Ser—Ala—Pro—Ala—Thr—Gly—Gly—Val—Lys—Lys—Pro—His—Arg—Tyr—Arg—Pro—Gly—Gly—Lys(Biotin)—OH
Synonyms:	ATKAAR-K(Me3)-SAPATGGVKKPHRYRPG-GK(Biotin), H3(21-44)K27me3 Substrate, Histone H3 (21-44) (Lys ²⁷ me3), [Lys(Me3)27]-Histone H3 (21-44)-GK(Biotin)	
MF:	C ₁₃₀ H ₂₂₀ N ₄₄ O ₃₃ S • XCF ₃ COOH	• XCF ₃ COOH
FW:	2,959.5	
Purity:	≥95%	
Supplied as:	A solid	
Storage:	-20°C	
Stability:	≥4 years	

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Histone H3K27Me3 (21-44)-GK-biotin (trifluoroacetate salt) is supplied as a solid. A stock solution may be made by dissolving the histone H3K27Me3 (21-44)-GK-biotin (trifluoroacetate salt) in water. The solubility of histone H3K27Me3 (21-44)-GK-biotin (trifluoroacetate salt) in water is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Histone H3K27Me3 (21-44)-GK-biotin is a peptide fragment of histone H3 that corresponds to amino acid residues 22-45 of the human histone H3.1 and 3.2 sequences. It is trimethylated at lysine 27 and biotinylated via a C-terminal GK linker. Trimethylation of histone H3 at lysine 27 is associated with gene silencing.¹ It is involved in tumor progression through its regulation by enhancer of zeste homolog 2 (EZH2) and transcriptional repression of tumor suppressor genes.^{2,3} Levels of H3K27Me3 are reduced in 293 T-REx cells containing EED^{R236T} and SUZ12^{G610V} mutations and in lymphoblastoid cells isolated from patients with Weaver syndrome, a rare overgrowth disorder characterized by EZH2, EED, or SUZ12 mutations, cancer susceptibility, and various distinctive physical features.⁴ Histone H3K27Me3 (21-44)-GK-biotin has been used as a substrate for histone lysine demethylases (KDMs) to determine substrate specificity.⁵

References

1. Becker, J.S., Nicetto, D., and Zaret, K.S. H3K9me3-dependent heterochromatin: Barrier to cell fate changes. *Trends Genet.* **32(1)**, 29-41 (2016).
2. Wu, Z., Lee, S.T., Qiao, Y., et al. Polycomb protein EZH2 regulates cancer cell fate decision in response to DNA damage. *Cell Death Differ.* **18(11)**, 1771-1779 (2011).
3. Gan, L., Yang, Y., Li, Q., et al. Epigenetic regulation of cancer progression by EZH2: From biological insights to therapeutic potential. *Biomark. Res.* **6**, 10 (2018).
4. Imagawa, E., Higashimoto, K., Sakai, Y., et al. Mutations in genes encoding polycomb repressive complex 2 subunits cause Weaver syndrome. *Hum. Mutat.* **38(6)**, 637-648 (2017).
5. Laukka, T., Myllykoshi, M., Looper, R.E., et al. Cancer-associated 2-oxoglutarate analogues modify histone methylation by inhibiting histone lysine demethylases. *J. Mol. Biol.* **430(18 pt B)**, 3081-3092 (2018).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

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