

Product Data Sheet

Product Name: Endotrophin (Mus musculus) TFA

Cat. No.: GC81351

Chemical Properties

Cas. No.

Formula $C_{345}H_{520}N_{92}O_{106}S_7 \cdot xC_2HF_3O_2$ M.Wt 7876.83

Solubility DMSO: 100 mg/mL (Need ultrasonic) Storage Sealed storage, away from moisture

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure Thr-Glu-Pro-Leu-Phe-Leu-Thr-Lys-Thr-
Asp-Ile-Cys-Lys-Leu-Ser-Arg-Asp-Ala-
Gly-Thr-Cys-Val-Asp-Phe-Lys-Leu-Leu-
Trp-His-Tyr-Asp-Leu-Glu-Ser-Lys-Ser-
Cys-Lys-Arg-Phe-Trp-Tyr-Gly-Gly-Cys-
Gly-Gly-Asn-Glu-Asn-Arg-Phe-His-Ser-
Gln-Glu-Glu-Cys-Glu-Lys-Met-Cys-Ser-
Pro-Glu-Leu-Thr-Val (Disulfide
bridge: Cys12-Cys62, Cys21-
Cys45, Cys37-Cys58) (TFA salt)

Background

Endotrophin (Mus musculus) TFA is an adipokine, a cleavage fragment derived from Collagen VI, whose levels are elevated in adipose tissue and breast tumors of obese mice. Endotrophin (Mus musculus) TFA activates the TGF- β signaling pathway and reduces the expression of hormone-sensitive lipase. Endotrophin (Mus musculus) TFA induces adipogenesis, lipid accumulation, fibrosis, inflammation, angiogenesis, adipose tissue expansion, epithelial-mesenchymal transition, and insulin resistance; it also induces Cisplatin resistance in cancer cells. Endotrophin (Mus musculus) TFA can be used in research related to metabolic diseases such as obesity and type 2 diabetes, as well as

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cancers such as breast cancer [1] [2] [3].

In Vivo, Endotrophin (Mus musculus) (200 mg/kg; ad libitum; 8 weeks) TFA administration in high-fat diet-fed mice induces local adipose tissue overexpression that promotes adipogenesis, suppresses lipolysis via reduced HSL phosphorylation, enhances lipid accumulation in adipose tissue, and shifts macrophage polarization toward a pro-inflammatory M1 phenotype^[1]. Neutralizing antibody against Endotrophin (Mus musculus) TFA neutralizes endotrophin activity in high-fat diet-induced obese mice and significantly improves insulin sensitivity^[2]. Overexpression of Endotrophin (Mus musculus) TFA in MMTV-PyMT transgenic mice significantly increases primary tumor volume, promotes the growth of lung metastatic lesions, and restores tumor growth in collagen VI-deficient MMTV-PyMT mice^[2]. Induction of Endotrophin (Mus musculus) TFA confers cisplatin resistance in breast tumor-bearing mice, while neutralizing Endotrophin activity or reducing its levels using TZDs restores cisplatin sensitivity^[2]. Endotrophin (Mus musculus) TFA induces adipose tissue fibrosis and inflammation in mice, and causes systemic dyslipidemia, hepatic steatosis and insulin resistance; blocking endogenous Endotrophin with neutralizing antibodies effectively reverses these manifestations^[3].

In Vitro, Endotrophin (Mus musculus) (24 h) TFA upregulates the expression of pro-fibrotic (Col1 α 1, Tgf β 1, Tgf β R2) and pro-inflammatory (Nlrp3, Tlr4) genes in the stromal vascular fraction (SVF) isolated from mouse white adipose tissue (WAT)^[1]. Endotrophin (Mus musculus) (24-72 h) TFA induces fibrosis in differentiating 3T3-L1 mouse adipocytes, reduces adiponectin expression, promotes adipogenesis, inhibits lipolysis, and increases lipid accumulation^[1]. Endotrophin (Mus musculus) (24 h) TFA upregulates the expression of Lox, pro-inflammatory genes (Il-1 β , Tnf- α , F4/80), and M1 macrophage markers (Cd40, Cd86) in primary macrophages isolated from mouse white adipose tissue (WAT)^[1]. Endotrophin (Mus musculus) TFA is abundantly secreted in fully differentiated 3T3-L1 adipocytes, whereas no secreted level is detected in 3T3-L1 preadipocytes^[3].

References:

- [1]. Zhao Y, et al. Divergent functions of endotrophin on different cell populations in adipose tissue. *Am J Physiol Endocrinol Metab.* 2016;311(6):E952-E963.
- [2]. Sun K, et al. Endotrophin, a multifaceted player in metabolic dysregulation and cancer progression, is a predictive biomarker for the response to PPAR γ agonist treatment. *Diabetologia.* 2017;60(1):24-29.

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[3]. Sun K, et al. Endotrophin triggers adipose tissue fibrosis and metabolic dysfunction. Nat Commun. 2014;5:3485. Published 2014 Mar 19.

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