

## Product Data Sheet

Product Name: IKVAVC acetate

Cat. No.: GC81341

### Chemical Properties

Cas. No.

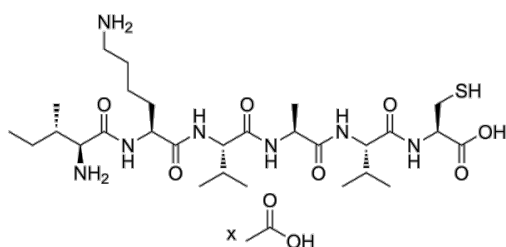
Formula  $C_{28}H_{53}N_7O_7S \cdot xC_2H_4O_2$  M.Wt 631.83

Solubility  $H_2O$ : 5 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



**Caution: Product has not been fully validated for medical applications. For research use only.**

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### Background

IKVAVC acetate is a derivative peptide of IKVAV with an artificially added cysteine (Cys) at its C-terminus. IKVAVC acetate retains all the biological activities of the original IKVAV, mainly acting as a neural adhesion/differentiation signaling peptide, and is equipped with an engineered linker arm that enables covalent conjugation to molecular materials. IKVAV inhibits the migration and activation of fibroblasts, downregulates the TGF- $\beta$ 1 signaling pathway and endoplasmic reticulum stress, and promotes nerve repair. IKVAV regulates the phenotype of macrophages, shifting them from the pro-inflammatory M1 type to the pro-reparative M2 type [1] [2] [3].

In Vitro, IKVAVC acetate is covalently conjugated to biomaterials such as hydrogels and dendrimers via chemical reactions. This functionalized material can provide bioactive signals in a long-term, stable manner, construct a bionic microenvironment conducive to nerve regeneration and angiogenesis, and shows application potential in the treatment of diseases such as spinal cord injury[1][2][3].

### References:

- [1]. Yin Y, et al. Pentapeptide IKVAV-engineered hydrogels for neural stem cell attachment. Biomater Sci. 2021;9(8):2887-2892.
- [2]. Jiang T, et al. IKVAV peptide-containing hydrogel decreases fibrous scar after spinal cord injury by inhibiting fibroblast migration and activation. Behav Brain Res. 2023;455:114683.
- [3]. Jha A, et al. Laminin-derived peptide, IKVAV, modulates macrophage phenotype through integrin mediation. Matrix Biol Plus. 2024;22:100143. Published 2024 Feb 15.

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