

## Tat-beclin 1

### Chemical Properties

CAS No. : 1423821-88-8

Formula:

Molecular Weight:

YGRKKRRQRRRGGTNVFNATFEIWHDGEFGT

Appearance: no data available

Storage: keep away from moisture

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

### Biological Description

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description | Tat-beclin 1, a peptide derived from the autophagy protein beclin 1, is a powerful inducer of autophagy. It interacts with GABAR-1 (GLIPR2), a negative regulator of autophagy. Tat-beclin 1 effectively reduces the buildup of polyglutamine expansion protein aggregates and inhibits the replication of various pathogens, such as HIV-1, in laboratory experiments. In addition, it has demonstrated the ability to decrease mortality in mice infected with chikungunya (CHIKV) or West Nile virus (WNV).                                                                                                                    |
| In vitro    | Tat-beclin 1, at concentrations of 10, 30, and 50 $\mu$ M administered for 24 hours, promotes autophagy, leading to a dose-dependent reduction in p62 levels—a selective autophagy marker—and facilitates the transformation of LC3-I into its autophagosome-associated, lipidated counterpart, LC3-II, across various cell lines and in primary murine embryonic fibroblasts (MEFs). Additionally, at a concentration of 10 $\mu$ M and applied 2-4 hours after infection, Tat-beclin 1 significantly reduces the intracellular survival rate of L. monocytogenes within primary murine bone-marrow-derived macrophages (BMDMs). |
| In vivo     | Tat-beclin 1, administered intraperitoneally at a dosage of 15 mg/kg daily starting one day after infection and continuing for 20 days, induces autophagy in the peripheral tissues of adult mice and in the central nervous system of neonatal mice (6-week-old GFP-LC3 mice)[1].                                                                                                                                                                                                                                                                                                                                                |

### Reference

Sanae Shoji-Kawata, et al. Identification of a Candidate Therapeutic Autophagy-Inducing Peptide. Nature. 2013 Feb 14;494(7436):201-6.

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