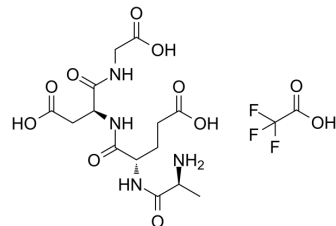


## Epitalon TFA

<b>Cat. No.:</b>	HY-P1149A
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>23</sub> F <sub>3</sub> N <sub>4</sub> O <sub>11</sub>
<b>Molecular Weight:</b>	504.37
<b>Sequence Shortening:</b>	AEDG
<b>Target:</b>	Telomerase
<b>Pathway:</b>	Cell Cycle/DNA Damage
<b>Storage:</b>	Stored under nitrogen, away from moisture
	Powder    -80°C    2 years
	-20°C    1 year

\* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen, away from moisture)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 250 mg/mL (495.67 mM; Need ultrasonic)  
 H<sub>2</sub>O : 100 mg/mL (198.27 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.9827 mL	9.9134 mL	19.8267 mL
	5 mM	0.3965 mL	1.9827 mL	3.9653 mL
	10 mM	0.1983 mL	0.9913 mL	1.9827 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 50 mg/mL (99.13 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.08 mg/mL (4.12 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (4.12 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (4.12 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Epitalon TFA is an anti-aging agent and a telomerase activator. Epitalon TFA has an inhibitory effect of the on the development of spontaneous tumors in mice, has geroprotective actions and intranasal administration increases neuronal activity. Epitalon TFA can be used for cancer, old age and Retinitis Pigmentosa<sup>[1]</sup>.

<b>In Vitro</b>	<p>Addition of Epithalon peptide in telomerase-negative human fetal fibroblast culture induced expression of the catalytical subunit, enzymatic activity of telomerase, and telomere elongation, which can be due to reactivation of telomerase gene in somatic cells and indicates the possibility of prolonging life span of a cell population and of the whole organism<sup>[1]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<b>In Vivo</b>	<p>Epitalon TFA increases the lifespan of mice and fruit flies and restores the circadian rhythms of melatonin and cortisol production in old rhesus monkeys. At the same time, Epitalon prolongs the functional integrity of the eye retina in Campbell rats with hereditary Retinitis Pigmentosa and improves the visual functions in patients with pigmental retinal degeneration [1].</p> <p>Epitalon TFA (subcutaneous injection; 1.0 µg/mouse (30-40 µg/kg); 5 consecutive days every month; 3-12 months) does not influence food consumption, body weight or mean life span of mice. However, Epitalon slows down the age-related switching-off of estrous function and decreased the frequency of chromosome aberrations in bone marrow cells (by 17.1%). Epitalon increased by 13.3% the life span of the last 10% of the survivors in comparison with the control group in Swiss-derived SHR mice<sup>[4]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="347 659 1515 968"> <tr> <td data-bbox="347 659 618 726">Animal Model:</td> <td data-bbox="618 659 1515 726">Swiss-derived SHR mice<sup>[4]</sup></td> </tr> <tr> <td data-bbox="347 726 618 783">Dosage:</td> <td data-bbox="618 726 1515 783">1.0 µg/mouse (30-40 µg/kg)</td> </tr> <tr> <td data-bbox="347 783 618 875">Administration:</td> <td data-bbox="618 783 1515 875">Subcutaneous injection; 1.0 µg/mouse (30-40 µg/kg) ; 5 consecutive days every month; 3-12 months</td> </tr> <tr> <td data-bbox="347 875 618 968">Result:</td> <td data-bbox="618 875 1515 968">Significantly decreased the age-associated increase in chromosome aberrations after long-term treatment.</td> </tr> </table>	Animal Model:	Swiss-derived SHR mice <sup>[4]</sup>	Dosage:	1.0 µg/mouse (30-40 µg/kg)	Administration:	Subcutaneous injection; 1.0 µg/mouse (30-40 µg/kg) ; 5 consecutive days every month; 3-12 months	Result:	Significantly decreased the age-associated increase in chromosome aberrations after long-term treatment.
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## REFERENCES

- [1]. Khavinson VKh. et al. Peptides and Ageing. Neuro Endocrinol Lett. 2002;23 Suppl 3:11-144.
- [2]. Vanhee C, et al. Identification of the small research tetra peptide Epitalon, assumed to be a potential treatment for cancer, old age and Retinitis Pigmentosa in two illegal pharmaceutical preparations. Drug Test Anal. 2015 Mar;7(3):259-64.
- [3]. Khavinson VKh, et al. Epithalon peptide induces telomerase activity and telomere elongation in human somatic cells. Bull Exp Biol Med. 2003 Jun;135(6):590-2.
- [4]. Vladimir N Anisimov, et al. Effect of Epitalon on biomarkers of aging, life span and spontaneous tumor incidence in female Swiss-derived SHR mice. Biogerontology. 2003;4(4):193-202

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

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