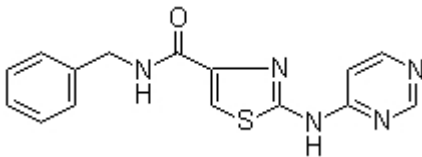


## Product Introduction

### Thiazovivin

Thiazovivin (Tzv) is a novel **ROCK** inhibitor with **IC50** of 0.5  $\mu\text{M}$ , promotes hESC survival after single-cell dissociation.

#### Technical Data:

<b>Molecular Weight (MW):</b>	311.36	
<b>Formula:</b>	C <sub>15</sub> H <sub>13</sub> N <sub>5</sub> OS	
<b>Solubility (25°C)</b>	DMSO 15 mg/mL	
<b>* &lt;1 mg/ml means slightly soluble or insoluble:</b>	Water <1 mg/mL	
	Ethanol <1 mg/mL	
<b>Purity:</b>	>98%	
<b>Storage:</b>	3 years -20°C Powder 6 months-80°C in DMSO	
<b>CAS No.:</b>	1226056-71-8	

#### Biological Activity

Although displaying little impact on cell proliferation, Thiazovivin treatment significantly enhances the survival of human embryonic stem cells (hESCs) after enzymatic dissociation more than 30-fold, while homogenously maintaining pluripotency with the characteristic colony morphology, expression of typical pluripotency markers such as alkaline phosphatase (ALP), and normal karyotype. Dissociated hESCs treated with Thiazovivin display dramatically increased adhesion to matrigel- or laminin-coated plates but not to gelatin-coated plates within a few hours. Thiazovivin treatment increases cell-ECM

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adhesion-mediated  $\beta 1$  integrin activity, which synergizes with growth factors to promote cell survival. In addition to activating integrin, Thiazovivin but not Tyrintegin (Ptn) protects hESCs from death in the absence of ECM in suspension through E-cadherin-mediated cell-cell interaction. Thiazovivin treatment potently inhibits endocytosis of E-cadherin, consequently stabilizing E-cadherin on the cell surface and leading to reestablishment of cell-cell interaction, which is essential for hESC survival in ECM-free conditions. Thiazovivin but not Tyrintegin (Ptn) at 2  $\mu\text{M}$  inhibits Rho-associated kinase (ROCK) activity and protects hESCs at a similar level as the widely used selective ROCK inhibitor Y-27632 at 10  $\mu\text{M}$ , suggesting that Rho-ROCK signaling regulates cell-ECM and cell-cell adhesion. <sup>[1]</sup> Thiazovivin at 1  $\mu\text{M}$  increases the reprogramming efficiency of CB mononuclear cells to induced pluripotent stem cells (iPSCs) by more than 10 times. <sup>[2]</sup>

## References

- [1] Xu Y, et al. Proc Natl Acad Sci U S A, 2010, 107(18), 8129-8134.
- [2] Hu K, et al. Blood, 2011, 117(14), e109-119.
- [3] Lin T, et al. Nat Methods, 2009, 6(11), 805-808.



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