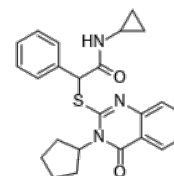


**Product Name** : ERBB4 agonist EF-1  
**Cat. No.** : PC-23725  
**CAS No.** : 930856-19-2  
**Molecular Formula** : C<sub>24</sub>H<sub>25</sub>N<sub>3</sub>O<sub>2</sub>S  
**Molecular Weight** : 419.54  
**Target** : EGFR  
**Solubility** : 10 mM in DMSO



CAS: 930856-19-2

## Biological Activity

ERBB4 agonist EF-1 is a specific small molecule **ERBB4 (HER4)** agonist that induce ERBB4 homodimerization with EC<sub>50</sub> of 10.5 uM in ERBB4/ERBB4 dimerization assay, reduces cell death and hypertrophy in cardiomyocytes and decreases collagen production in cardiac fibroblasts.

EF-1 displays little to no stimulatory effect on ERBB2/ERBB3 heterodimerization at higher concentrations (EC<sub>50</sub>>32 uM).

EF-1 dose-dependently and significantly potentiates NRG1-induced ERBB4 homodimerization by 299.5% at 32 uM.

EF-1 induces a time-dependent phosphorylation of Akt in cardiomyogenically differentiated immortalized rat atrial myocytes (iAMs).

EF-1 and NRG1 activate similar downstream signaling pathways in human cultured cardiac fibroblasts, downregulates the transforming growth factor-β (TGF-β) and MAPK/ERK pathways.

EF-1 decreases TGF-β1-induced collagen expression through ERBB4 in vitro, decreases COL3A1 mRNA levels.

EF-1 reduces cardiomyocyte cell death and hypertrophy in vitro.

EF-1 prevents cardiac fibrosis in mouse model of AngII-induced myocardial fibrosis, does not significantly alter cardiac dimensions on ultrasound.

EF-1 prevented cardiomyocyte injury in doxorubicin (DOX)-treated mice, reduces cardiac remodeling and interstitial fibrosis after MI.

## References

Cools JMT, et al. *Nat Commun.* 2025 Jan 10;16(1):576.

**Caution: Product has not been fully validated for medical applications. Lab Use Only!**

E-mail: tech@probechem.com