

## Small Molecules

### TTNPB

Retinoid pathway activator; Activates retinoic acid receptor (RAR)

Catalog # 72892

10 mg



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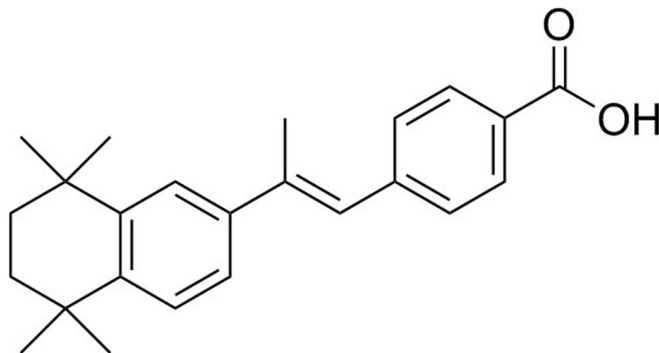
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## Product Description

TTNPB is an analog of retinoic acid that potently and selectively activates retinoic acid receptors (RAR;  $EC_{50}$  = 21, 4, and 2.4 nM for RAR $\alpha$ , RAR $\beta$ , and RAR $\gamma$ , respectively; Beard et al.; Wong et al.). It does not act on retinoid X receptors and weakly agonizes farnesoid X receptor ( $EC_{50}$  > 1  $\mu$ M; Maloney et al.; Wong et al.). TTNPB is used to study RAR action in diverse processes, including epidermal cell proliferation, embryogenesis, and stem cell differentiation (Araoka et al.; Hou et al.; Minucci et al.; Thacher et al.).

Molecular Name:	TTNPB
Alternative Names:	AGN 191183; Arotinoid Acid; Ro 13-7410
CAS Number:	71441-28-6
Chemical Formula:	C <sub>24</sub> H <sub>28</sub> O <sub>2</sub>
Molecular Weight:	348.5 g/mol
Purity:	≥ 98%
Chemical Name:	4-[(1E)-2-(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)-1-propen-1-yl]-benzoic acid
Structure:	



## Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact <a href="mailto:techsupport@stemcell.com">techsupport@stemcell.com</a> .
Solubility:	<ul style="list-style-type: none"><li>· Absolute ethanol ≤ 280 <math>\mu</math>M</li><li>· DMSO ≤ 5.7 mM</li></ul> For example, to prepare a 1 mM stock solution in DMSO, resuspend 1 mg in 2.86 mL of fresh DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

## Published Applications

### REPROGRAMMING

- Enables chemical reprogramming (without genetic factors) of mouse embryonic fibroblasts to induced pluripotent stem (iPS) cells, in combination with CHIR99021, Tranylcypromine, Valproic Acid, 3-Deazaneplanocin A, and RepSox (Hou et al.).

### DIFFERENTIATION

- In combination with CHIR99021 or Activin A, induces intermediate mesoderm formation from human or mouse pluripotent stem cells, respectively (Araoka et al.; Oeda et al.).
- Promotes neuronal differentiation in cultured chick caudal neural plate explants (Diez del Corral et al.).

### CANCER RESEARCH

- Induces the in vitro growth and differentiation to granulocytes of myeloid progenitors isolated from myelodysplastic syndrome (MDS) patients (Fabian et al.).

## References

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- Wong MF et al. (1997) Synthesis and receptor binding affinity of conformationally restricted retinoic acid analogues. Bioorg Med Chem Lett 7(17): 2313–2318.

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