# Vosoritide acetate

**Cat. No.:** HY-P3503A

**Molecular Formula:** $C_{176}H_{290}N_{56}O_{51}S_3.C_2H_4O_2$

**Molecular Weight:** 4162.78

**Sequence:** Pro-Gly-Gln-Glu-His-Pro-Asn-Ala-Arg-Lys-Tyr-Lys-Gly-Ala-Asn-Lys-Lys-Gly-Leu-Ser-Lys-Gly-Cys-Phe-Gly-Leu-Lys-Leu-Asp-Arg-Ile-Gly-Ser-Met-Ser-Gly-Leu-Gly-Cys (Disulfide bridge:Cys23-Cys39)

PGQEHPNARKYKGANKKGLSKGCFGLKLDRIGSMSGLGC (Disulfide bridge:Cys23-Cys39) (Acetate salt)

**Sequence Shortening:** PGQEHPNARKYKGANKKGLSKGCFGLKLDRIGSMSGLGC (Disulfide bridge:Cys23-Cys39)

**Target:** FGFR

**Pathway:** Protein Tyrosine Kinase/RTK

**Storage:** Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light, under nitrogen)

## SOLVENT & SOLUBILITY

**In Vitro**

$H_2O$ : ≥ 100 mg/mL (24.02 mM)

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Concentration / Solvent / Mass | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 0.2402 mL | 1.2011 mL | 2.4022 mL |
| | 5 mM | 0.0480 mL | 0.2402 mL | 0.4804 mL |
| | 10 mM | 0.0240 mL | 0.1201 mL | 0.2402 mL |

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

## BIOLOGICAL ACTIVITY

**Description**

Vosoritide (BMN 111) acetate is a natriuretic peptide receptor 2 (NPR2) agonist that acts on the proliferation and differentiation of chondrocytes to promote bone growth[1].

**In Vitro**

Vosoritide (0.1 μM; 1 h) acetate decreases NPR2 phosphorylation in chondrocytes[2].

Vosoritide (0.1 μM; 6 d) acetate improves chondrocyte differentiation and increases the proliferative growth plate area of cultured $Fgfr3^{Y367C/+}$ femurs[2].

Vosoritide (10 μM; overnight) acetate reduces ERK1/2 activation in ACH growth-plate chondrocytes[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

| | |
|---|---|
| Cell Line: | Chondrocyte cultures |
| Concentration: | 0.1 μM |
| Incubation Time: | 1 hour |
| Result: | Led to reduction in NPR2 phosphorylation. |

Western Blot Analysis[3]

| | |
|---|---|
| Cell Line: | Chondrocyte |
| Concentration: | 10 μM |
| Incubation Time: | Overnight |
| Result: | Prevented FGF-mediated increase in ERK1/2 phosphorylation. |

**In Vivo**

Vosoritide (subcutaneous injection; 800 μg/kg; once daily; 20 d) acetate treatment leads to improvement in skeletal parameters in Fgfr3 gain-of-function mutation mouse[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | $Fgfr3^{Y367C/+}$ mice[3] |
| Dosage: | 800 μg/kg |
| Administration: | Subcutaneous injection; 800 μg/kg; once daily; 20 days |
| Result: | Observed phenotypic changes including flattening of the skull, elongation of the snout, improvement of the anterior crossbite, larger paws and digits, and longer and straightened tibias and femurs. |

## REFERENCES


[1]. Leia C. Shuhaibar, et al. Phosphatase inhibition by LB-100 enhances BMN-111 stimulation of bone growth. JCI Insight. 2021 May 10;6(9):e141426.

[2]. Shuhaibar LC, et al. Phosphatase inhibition by LB-100 enhances BMN-111 stimulation of bone growth. JCI Insight. 2021 May 10;6(9):e141426.

[3]. Lorget F, et al. Evaluation of the therapeutic potential of a CNP analog in a Fgfr3 mouse model recapitulating achondroplasia. Am J Hum Genet. 2012 Dec 7;91(6):1108-14.





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