
Product Data Sheet

Product Name: Prodipine hydrochloride

Cat. No.: GC32546

Chemical Properties

Cas. No. 31314-39-3

SMILES CC(C)N1CCC(C2=CC=CC=C2)(CC1)C3=CC=CC=C3.ClFormula C₂₀H₂₆ClN M.Wt 315.88

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Kinase experiment:**

Dipeptidyl peptidase IV activity is determined using the fluorogenic substrate Gly-Pro-4-methoxy-2-naphthylamide. Hydrolysis of L-Ala-4-methoxy-2-naphthylamide in 60 mM phosphate buffer pH 7.4 is chosen for the determination of aminopeptidase M activity. The intramolecularly quenched fluorogenic substrate Lys (2,4 dinitrophenyl)-Pro-Pro-NH-CH₂-CH₂-NH₂-aminobenzoyl-2HCl is used to assay aminopeptidase P activity. Prolyl oligopeptidase (PO) is measured with N-benzyloxycarbonyl-Gly-Pro-7-amino-4-methylcoumarin. One unit of enzymatic activity is defined as the amount of enzyme catalyzing the formation of 1 μmol of assay product per minute under the conditions used[1].

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

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Animal experiment:

Rabbits[1] Male New Zealand white rabbits (3-4 kg) are used.
EXPERIMENT 1 The rabbits (n=1 for each condition) receive a single iv. injection of 10 mg Prodigine or saline. Blood samples are taken 5 min before injection and 30 min, 1 hr, 2 hr, and 24 hr after the treatment.
EXPERIMENT 2 The rabbits (n=1 for each condition) receive a single i.v. bolus injection of saline or are treated with 1, 5, or 10 mg Prodigine (also in a single i.v. bolus) at time 0. The animals are kept under observation for 40 days. At several time points (-5 min, 4 hr, and at days 1, 2, 3, 6, 12, 21, and 40), blood samples are taken and body weight determined. Rabbits are killed with pentobarbital after termination of the observation period.

References:

[1]. De Meester I, et al. In vivo inhibition of dipeptidyl peptidase IV activity by pro-pro-diphenyl-phosphonate (Prodipine).
Biochem Pharmacol.
1997 Jul
1;54(1):173-9.

Background

Prodipine, a diphenyl-phosphonate derivative. The IC50s of Prodigine for purified and plasma Dipeptidyl peptidase IV (DPP IV) from the rabbit are 4.5 μ M and 30 μ M, respectively.

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Prodipine, a diphenyl-phosphonate derivative selected from a group of slow-binding irreversible inhibitors of this enzyme. The IC₅₀ values of Prodipine for purified and plasma DPP IV from the rabbit are 4.5 μ M and 30 μ M, respectively[1].

Male rabbits weighing 3-4 kg receive a single intravenous injection with 10 mg Prodipine or saline. After 1 hr, plasma DPP IV activity has decreased to less than 20% of the preinjection value and remains unchanged during a 24 hr observation period. A profound and long-lasting inhibition of plasma DPP IV activity is observed in the treated animals (1, 5 or 10 mg). It takes 5 to 8 days to reach half of the pretreatment DPP IV activity and generally more than 20 days for a complete recovery[1].

[1]. De Meester I, et al. In vivo inhibition of dipeptidyl peptidase IV activity by pro-pro-diphenyl-phosphonate (Prodipine). *Biochem Pharmacol.* 1997 Jul 1;54(1):173-9.

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