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PRODUCT INFORMATION



Vildagliptin

Item No. 14705

CAS Registry No.: 274901-16-5

Formal Name: 1-[2-[(3-hydroxytricyclo[3.3.1.1^{3,7}]dec-1-yl)amino]acetyl]-2S-pyrrolidinecarbonitrile

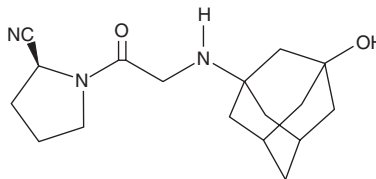
MF: C₁₇H₂₅N₃O₂

FW: 303.4

Purity: ≥98%

Stability: ≥2 years at -20°C

Supplied as: A crystalline solid



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Vildagliptin is supplied as a crystalline solid. A stock solution may be made by dissolving the vildagliptin in the solvent of choice. Vildagliptin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of vildagliptin in ethanol and DMSO is approximately 16 mg/ml and approximately 20 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of vildagliptin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of vildagliptin in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Glyptins are a class of oral antihyperglycemic agents that inhibit dipeptidyl peptidase 4 (DPP-4), which can act as a serine exopeptidase.¹ In addition to having use in type 2 diabetes, gliptins have positive cardiovascular and anti-inflammatory effects.¹⁻³ Vildagliptin is an inhibitor of DPP-4 (IC₅₀ = 3.5-34 nM).^{4,5} It also inhibits DPP-8 and DPP-9 (K_i = 810 and 95 nM, respectively) but not DPP-2 or the related fibroblast activation protein α.⁶ Through its effects on DPP-4, it blocks the degradation of several circulating peptides, including incretins (stimulators of insulin secretion) like glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1.^{7,8} Vildagliptin reduces fasting and postprandial glucose levels and decreases inflammatory and oxidative stress in diverse animal models of disease.^{1,3}

References

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WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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