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## Product Data Sheet

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Product Name: ONO 4817

Cat. No.: GC15005

### Chemical Properties

Cas. No. 223472-31-9

Chemical Name N-[1-(ethoxymethoxy)-5-(hydroxyamino)-4-methyl-5-oxopentan-2-yl]-4-phenoxybenzamide

SMILES CCOCOC(C)(C)C(=O)NO)NC(=O)C1=CC=C(C=C1)OC2=CC=CC=C2

Formula  $C_{22}H_{28}N_2O_6$  M.Wt 416.47

Solubility <20.82mg/ml in ethanol; <41.65mg/ml in DMSO Storage Store at RT

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

### Background

ONO 4817 is a potent inhibitor of MMP-2, MMP-3, MMP-7, MMP-9, MMP-12 and MMP-13 with IC50 value of 0.73 nM, 42 nM, 2500 nM, 1.1 nM, 2.1 nM, 0.45 nM and 1.1 nM, respectively [1].

Matrix metalloproteinases (MMPs) are zinc-dependent endopeptidases that belong to the metzincin superfamily and play an important role in tissue remodeling associated with various physiological or pathological processes such as morphogenesis, angiogenesis, tissue repair, cirrhosis, arthritis, and metastasis. It has been reported that MMPs involve in the tumor invasion and angiogenesis processes [1].

ONO 4817 is a potent MMP inhibitor and has a quite spread spectrum on MMP-2, MMP-3, MMP-7, MMP-9, MMP-12 and MMP-13, while has no effect on MMP-1 . When tested with the supernatant of lung cancer cell line PCI14PE6 cells, ONO 4817 caused the inhibition on the activities of MMP-2 and MMP-9 in a dose dependent manner (0.1-10  $\mu$ M) [2].

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

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In nude mice model with PC14 or PC14PE6 subcutaneous xenograft that produced metastasis only in the lungs, administration of ONO 4817 caused significant reduction of the number of lung metastasis, inhibited the formation of pleural effusion and decreased the tumor volumes [2]. In Sprague-Dawley rat model, ONO 4817 treatment (5 mg) significantly inhibited thickening of the submesothelial layer and accumulation of type I collagen in the peritoneum and prevented the increase of the number of macrophages and blood vessels [3].

### References:

- [1]. Okamoto, Y., et al., A matrix metalloproteinase inhibitor, ONO-4817, suppresses the development of aortic intimal hyperplasia in experimental hyperlipidemic rabbit. *Int Heart J*, 2007. 48(3): p. 369-78.
- [2]. Shiraga, M., et al., Organ heterogeneity of host-derived matrix metalloproteinase expression and its involvement in multiple-organ metastasis by lung cancer cell lines. *Cancer Res*, 2002. 62(20): p. 5967-73.
- [3]. Ro, Y., et al., Inhibitory effects of matrix metalloproteinase inhibitor ONO-4817 on morphological alterations in chlorhexidine gluconate-induced peritoneal sclerosis rats. *Nephrol Dial Transplant*, 2007. 22(10): p. 2838-48.

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