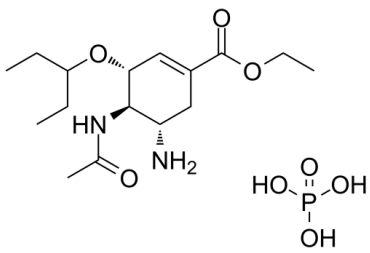
Data Sheet

Product Name:	Oseltamivir (phosphate)
Cat. No.:	CS-0871
CAS No.:	204255-11-8
Molecular Formula:	C16H31N2O8P
Molecular Weight:	410.40
Target:	Influenza Virus
Pathway:	Anti-infection
Solubility:	H2O : 100 mg/mL (243.66 mM; Need ultrasonic); DMSO : 100 mg/mL (243.66 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Oseltamivir phosphate (GS 4104) is a neuraminidase inhibitor recommended for the treatment and prophylaxis of **influenza A** and **B**. IC50 & Target: Influenza A and B[1] **In Vitro:** Oseltamivir phosphate (OP) is a prodrug that is readily absorbed from the gastrointestinal tract after oral administration and is extensively converted predominantly by hepatic esterases to Oseltamivir carboxylate (OC)[1]. Oseltamivir phosphate is a widely used anti-influenza sialidase inhibitor. The metabolic activity of CMA07 and CMT-U27 cell lines is significantly decreased with 305 μM Oseltamivir phosphate treatment (p=0.005 and p<0.0001 respectively) using One Way ANOVA testes. In contrast, no statistically significant alterations are observed with 0.305 μM (p=0.9781), 3.05 μM (p=0.7436) and 30.5 μM (p=0.9623) of Oseltamivir phosphate treatments when compare with control cells. Finally, to assess the effect of Oseltamivir phosphate on CMA07 and CMT-U27 programmed cell death, and given that 305 μM Oseltamivir phosphate treatment impaired cell metabolic activity, a programmed cell death measurement is performed with the TUNEL assay. Twenty-four hour Oseltamivir phosphate treatment, specifically at 305 μM, significantly increases CMA07 (p=0.001) and CMT-U27 (p=0.0002) DNA fragmentation, suggesting promotion of programmed cell death, when compare with lower Oseltamivir concentrations, or with PBS[2]. **In Vivo:** Oseltamivir phosphate-treated mice present significantly more inflammatory infiltrate in primary tumors (p=0.01). Ki-67 antigen and caspase-3 protein are used to assess CMT-U27 xenograft tumor cell proliferation and apoptosis respectively. Virtually no differences are found in Ki-67 and caspase 3 (p=0.2) expression between Oseltamivir-treated and non-treated mice[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: Oseltamivir phosphate is prepared in PBS[2].[2]CMA07 and CMT-U27 cells are cultured in 24-well plates in triplicate for each condition: 0.305 μM, 3.05 μM, 30.5 μM and 305 μM Oseltamivir phosphate and PBS is used as control. Cells are counted every day for 7 days in a Neubauer's chamber in a 1:2 dilution of cells in 0.4% trypan blue and cell count is done using the volume conversion factor for 1 mm^3, which is 1×10^4. This assay is repeated 3 times and growth curves are traced[2]. **Animal Administration:** Oseltamivir phosphate is prepared in PBS (Mice)[2].[2]Mice[2]

Female NIH(S)II-nu/nu nude mice, aged 4-6 weeks, are orthotopically inoculated with 1×10^6 viable CMT-U27 canine breast cancer cells in the mammary fat pad using a 25 gauge needle. A total of 8 mice are inoculated. When nodules reached a volume of approximately 500 mm^3, mice (n=8) are randomized and divided into control group (n=4) and treatment group (n=4).The animals receive intraperitoneally (IP) dailly either 100 μL of PBS (control group) or 100mg/Kg of Oseltamivir phosphate, diluted in PBS (treatment group) until time of death. Tumor size is measured using calipers, and tumor volume (mm^3) is estimated by width×length×height.

References:

[1]. Huang H, et al. Transplacental transfer of Oseltamivir phosphate and its metabolite Oseltamivir carboxylate using the ex vivo human placenta perfusion model in Chinese Hans population. J Matern Fetal Neonatal Med. 2016 Aug 8:1-5.

[2]. de Oliveira JT, et al. Anti-influenza neuraminidase inhibitor Oseltamivir phosphate induces canine mammary cancer cell aggressiveness. PLoS One. 2015 Apr 7;10(4):e0121590.

[3]. Li P, et al. A Simple and Robust Approach for Evaluation of Antivirals Using a Recombinant Influenza Virus Expressing Gaussia Luciferase. Viruses. 2018 Jun 13;10(6). pii: E325.

CAIndexNames:

1-Cyclohexene-1-carboxylic acid, 4-(acetylamino)-5-amino-3-(1-ethylpropoxy)-, ethyl ester, (3R,4R,5S)-, phosphate (1:1)

SMILES:

O=C(OCC)C1=C[C@H]([C@@H]([C@H](C1)N)NC(C)=O)OC(CC)CC.OP(O)(O)=O

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