

Materials List for

A High-Throughput Enzyme-Coupled Activity Assay to Probe Small Molecule Interaction with the dNTPase SAMHD1

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Citation

Yagüe-Capilla, M., Rudd, S.G. A High-Throughput Enzyme-Coupled Activity Assay to Probe Small Molecule Interaction with the dNTPase SAMHD1. *J. Vis. Exp.* (170), e62503, doi:10.3791/62503 (2021).

Date Published

April 16, 2021

DOI

10.3791/62503

URL

jove.com/video/62503

Materials

Name	Company	Catalog Number	Comments
2'-deoxyadenosine-5'-triphosphate (dATP)	Jena bioscience	NU-1001	Compound tested in SAMHD1 activator/substrate assay
2'-deoxycytidine-5'-triphosphate (dCTP)	Jena bioscience	NU-1002	Compound tested in SAMHD1 activator/substrate assay
2'-Deoxyguanosine-5'-(α -thio)-triphosphate (dGTP α S)	Jena bioscience	NU-424	Non-hydrolyzable dGTP analogue for SAMHD1 activator/substrate assay
2'-deoxyguanosine-5'-triphosphate (dGTP)	GE Healthcare	27-1870-04	SAMHD1 allosteric activator and substrate used in inhibition assay and activator/substrate assay
2'-Deoxythymidine-5'-[(α , β -imido)]triphosphate (dTMPNPP)	Jena bioscience	NU-907-1	Compound tested in SAMHD1 inhibition assay
2'-deoxythymidine-5'-triphosphate (dTTP)	Jena bioscience	NU-1004	Compound tested in SAMHD1 activator/substrate assay
2'Deoxyguanosine monohydrate (dGuo)	Sigma-Aldrich	D0901	Compound tested in SAMHD1 inhibition assay
384 well clear flat-bottom microplate	Thermo Fisher Scientific	262160	Assay plate
96 well clear U-bottom polypropylene microplate	Thermo Fisher Scientific	267245	Compound dilution plate
Ammonium heptamolybdate tetrahydrate	Sigma-Aldrich	A1343	Reagent required for malachite green working reagent
ara-Cytidine-5'-triphosphate (ara-CTP)	Jena bioscience	NU-1170	Compound tested in SAMHD1 activator/substrate assay
Clofarabine-5'-triphosphate (Cl-F-ara-ATP)	Jena bioscience	NU-874	Compound tested in SAMHD1 activator/substrate assay
Dimethyl sulfoxide (DMSO)	VWR	23486.297	Solvent
Ethylenediaminetetraacetic acid disodium salt dihydrate (EDTA)	Sigma-Aldrich	E5134	EDTA stop solution component
Gemcitabine-5'-triphosphate (dF-dCTP)	Jena bioscience	NU-1607	Compound tested in SAMHD1 activator/substrate assay
GraphPad Prism	GraphPad Software	Prism 8	Data analysis and visualisation

Guanosine 5'-triphosphate (GTP) sodium salt hydrate	Sigma-Aldrich	G8877	Allosteric activator for SAMHD1 activator/substrate assay
His-tagged E. coli inorganic pyrophosphatase (PPase)	Generated in house using Protein Science Facility, Karolinska Institutet	-	Recombinant PPase protein, hydrolyses inorganic triphosphate and pyrophosphate to orthophosphate so it can form complex with malachite green
His-tagged human SAMHD1	Generated in house using Protein Science Facility, Karolinska Institutet	-	Recombinant SAMHD1 protein, hydrolyses dNTPs into its corresponding nucleoside and inorganic triphosphate
Hydroxyurea	Sigma-Aldrich	H8627	Compound tested in SAMHD1 inhibition assay
Lomofungin	National Cancer Institute (NCI)/ Division of Cancer Treatment and Diagnosis (DCTD)/Developmental Therapeutics Program (DTP)	NSC106995	Compound tested in SAMHD1 inhibition assay
Magnesium Chloride hexahydrate (MgCl ₂)	Sigma-Aldrich	M2670	SAMHD1 reaction buffer component
Malachite green Carbinol hydrochloride	Sigma-Aldrich	213020	Malachite green stock component
Microplate Reader	Hidex	Hidex Sense Microplate reader	Data acquisition, absorption read at 630 nm wavelength
Sodium Chloride (NaCl)	Sigma-Aldrich	31434	SAMHD1 reaction buffer component
Sodium hydroxide (NaOH)	Sigma-Aldrich	567530	SAMHD1 reaction buffer component
Sodium phosphate (Na ₃ PO ₄)	Sigma-Aldrich	342483	Required for phosphate standard curve
Sulphuric acid 95-97%	Sigma-Aldrich	84720	Malachite green stock component
Tris-Acetate salt	Sigma-Aldrich	T1258	SAMHD1 reaction buffer component
Tris(2-carboxyethyl)phosphine hydrochloride (TCEP)	Sigma-Aldrich	C4706	SAMHD1 reaction buffer component
Tween-20	Sigma-Aldrich	P1379	SAMHD1 reaction buffer and malachite green working reagent component