GP(33-41)

Cat. No.:	HY-P0323
CAS No.:	161928-86-5
Molecular Formula:	$C_{46}H_{69}N_{11}O_{13}S$
Molecular Weight:	1016.17
Sequence:	Lys-Ala-Val-Tyr-Asn-Phe-Ala-Thr-Cys
Sequence Shortening:	KAVYNFATC
Target:	Arenavirus
Pathway:	Anti-infection
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description	GP(33-41), a 9-aa-long peptide, is the optimal sequence of the GP1 epitope of lymphocytic choriomeningitis virus, and can upregulate H-2D^b molecules at the RMA-S (Db Kb) cell surface with a SC_{50} of 344 nM[1].
In Vitro	GP(33-41) sensitizes MC57 and T2-D^b cells to lysis with ED_{50}s of 0.9±0.6 and 2.5±0.7 nM[1]. The interaction between T cell receptors (TCR) and peptide-major histocompatibility complex (pMHC) antigens can lead to varying degrees of agonism (T cell activation), or antagonism. The P14 TCR recognises the lymphocytic choriomeningitis virus (LCMV)-derived peptide, GP(33-41) (KAVYNFATC), presents in the context of H-2D[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]	Binding experiments are performed at 37°C with T2-D^b cells, with a Millipore MultiScreen assay system. The H-2D^b LCMV antigen gp276-286 (SGVENPGGYCL) is radioiodinated, and the radiolabeled peptide is purified. Cells (2×10^5 per well) are incubated in MultiScreen-HV 96-well filtration plates (pore size, 0.45 mm) with ^{125}I-gp276-286 (10 nM [final concentration]) for 90 min at 37°C. Cells are washed three times with ice-cold 1% BSA-PBS and by filtration under vacuum. The radioactivity bound to the cells retained on the filter is counted with a gamma counter. Direct binding is measured in the absence (total binding) or the presence (nonspecific binding) of a 1,000-fold excess (10 mM) of unlabeled gp276-286. Specific binding to H-2D^b is defined as the difference between total binding and nonspecific binding. Nontransfected T2 cells are used as a negative control under the same experimental conditions. Competition assays are performed with increasing concentrations (10^{-10} to 10^{-5} M) of unlabeled peptides competing against a fixed concentration (10^{-8} M) of ^{125}Igp276-286. The percent inhibition of binding is calculated as 100 × [1-(counts per minute in the presence of competitor - counts per minute of nonspecific binding)/counts per minute of specific binding]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Gairin JE, et al. Optimal lymphocytic choriomeningitis virus sequences restricted by H-2Db major histocompatibility complex class I molecules and presented to cytotoxic T lymphocytes. J Virol. 1995 Apr;69(4):2297-305.

[2]. Boulter JM, et al. Potent T cell agonism mediated by a very rapid TCR/pMHC interaction. Eur J Immunol. 2007 Mar;37(3):798-806.

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