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MHC-I and MHC-II epitope peptides - PADRE peptide

Product	Cat#	Package size
PADRE peptide (>70% - HPLC 214nm)	**P2284.7005**	**5mg**
PADRE peptide (>95% - HPLC 214nm)	**P2284.9501**	**1mg**
PADRE peptide (>95% - HPLC 214nm)	**P2284.9505**	**5mg**

Sequence	AKFVAAWTLKAAA Ala-Lys-Phe-Val-Ala-Ala-Trp-Thr-Leu-Lys-Ala-Ala-Ala
Synonym	Padre
CAS-No.	na
MW / Formula	1347.6 g/mol / $C_{65}H_{102}N_{16}O_{15}$

Description:

MHC-I restricted peptide epitopes

MHC-I glycoproteins are designed for the recognition of infected cells and tumor cells.
T cell epitopes are presented on the surface of antigen-presenting cells by MHC molecules. T cell epitopes presented by MHC class I molecules are typically peptides between 8 and 11 amino acids in length and exhibiting MHC-specific sequence motifs.

These antigenic peptides are derived from non-structural and structural proteins through proteolysis in the cytosolic compartment. Peptide-MHC-I complexes are then transported to the cell surface of antigen presenting cells and are recognised by CD8+ cytotoxic T lymphocytes (CTL). This interaction induces the differentiation of CTLs. Activated CTL lyse the infected cell, secrete cytokines, and proliferate.

Among others, PADRE has been successfully used in the development of Alzheimer Disease vaccines. It was demonstrated that immunization of BALB/c mice with this PADRE-amyloid-ß1-15 epitope vaccine induces high titers of anti-amyloid-ß antibodies.

This mechanism ensures that cells infected by viruses or intracellular bacteria or cancer cells can be detected, since pathogen or cancer-specific MHC peptide complexes are displayed on the cell surface. CTL can recognise such abnormal cells and eliminate them.

The genes of MHC I and II molecules are polymorphic. Each MHC allele has a distinct peptide binding motif which favours certain amino acid anchor residues at defined sequence positions.

Packaging Reconstitution Storage

The peptide is provided as a lyophilized, colorless powder without any additives. It can be shipped at ambient temperature and should be stored at -20°C.
The PADRE peptide can be reconstituted in water (1mg/mL stock solution) or water/methanol (1:1)(1mg/mL stock solution). Through the use of a vortex mixer, homogeniser or sonicator, a homogenous solution can be prepared. If you use an ultrasonic bath, take care of the vial labels. After reconstitution, the solution should be aliquoted and stored at or below -20°C.
Repeated thawing and freezing should be avoided.

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Handling

Caution, not fully tested. Good laboratory technique should be employed in the safe handling of any peptide product. If you are not fully trained or are unaware of the hazards involved, do not use this compound!

Caution: Do not take internally! Avoid contact by all modes of exposure. Wear appropriate laboratory attire including a lab coat, gloves, mask and safety glasses. Do not mouth pipette, inhale, ingest or allow coming into contact with open wounds. Wash thoroughly any area of the body which comes into contact with the product. Avoid accidental autoinoculation by exercising extreme care when handling in conjunction with any injection device.

This product is intended for research purposes by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. Genaxxon bioscience GmbH is not liable for any damages resulting from misuse or handling of this product.

References:

1.) J. Alexander, J. Sidney, S. Southwood, J. Ruppert, C. Oseroff, A. Maewal, K. Snoke, H. M. Serra, R. T. Kubo, A. Sette. H. M. Grey (1994) Development of high potency universal DR-restricted helper epitopes by modification of high affinity DR-blocking peptides. Immunity. 1994, 751-661.

2.) J. Alexander, M. F. del Guercio, A. Maewal, L. Qiao, J. Fikes, R. W. Chesnut, J. Paulson, D. R. Bundle, S. DeFrees, A. Sette (2000) Linear PADRE T helper epitope and carbohydrate B cell epitope conjugates induce specific high titer IgG antibody responses. J Immunol. 164, 1625-1633.

3.) M.G. Agadjanyan, A. Ghochikyan, I. Petrushina, V. Vasilevko, N. Movsesyan, M. Mkrtichyan, T. Saing, D. H. Cribbs (2005) Prototype Alzheimer's disease vaccine using the immunodominant B cell epitope from ß-amyloid and promiscuous T cell epitope pan HLA DR-binding peptide. J Immunol 174, 1580 – 1586.

Related Products

Cat #	Description
P2275	Ova (257-264) – SIINFEKL – available with a guaranteed purity of >70% or >95%.
P2276	Influenza A NP (366-374) – ASNENMETM – available with a guaranteed purity of >70% or >95%.
P2277	Influenza A matrix protein (58-66) – GILGFVFTL – available with a guaranteed purity of >70% or >95%.
P2278	HIV-1 p17 Gag (77-85) – SLYNTVATL – available with a guaranteed purity of >70% or >95%.
P2279	HCV-NS5b – ALYDVVSKL – available with a guaranteed purity of >70% or >95%.
P2280	LCMV GP (33-41) – KAVYNFATM – available with a guaranteed purity of >70% or >95%.
P2281	Melan-A / MART-1 (26-35) – EAAGIGILTV – available with a guaranteed purity of >70% or >95%.
P2282	MAGE-3 antigen (271-279) – FLWGPRALV – available with a guaranteed purity of >70% or >95%.
P2283	Ova (323-339) ISQAVHAAHAEINEAGR – available with a guaranteed purity of >70% or >95%.
P2284	PADRE - Peptid AKFVAAWTLKAAA – available with a guaranteed purity of >70% or >95%.
P2285	EBV EBNA-3A peptide RPPIFIRRL (HLA-B*0702) – available with a guaranteed purity of >70% or >95%.
P2295	EBV BMLF-1 Peptid GLCTLVAML (HLA-A*0201) - available with a guaranteed purity of >70% or >95%.
P2296	CMV pp65 Peptid NLVPMVATV (HLA-A*0201) – available with a guaranteed purity of >95%.
P2301	EBNA-1 Protein (562-570) – FMVFLQTHI – available with a guaranteed purity of >95%.

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