



Immune Epitope Database Overview

www.iedb.org

Presented by: Alessandro Sette, IEDB Principal Investigator

Immune Epitope Database

www.iedb.org

Database | Resource of experimentally-derived epitope information

- Allergens
 - Infectious diseases
 - Autoimmune diseases
 - Transplantation / Alloantigens
- ... and more



Containing data on over **1.3 million unique structures** analyzed in over **3.8 million assays** from more than **21,500 curated references.**

Consistent data entry requires well defined data structure

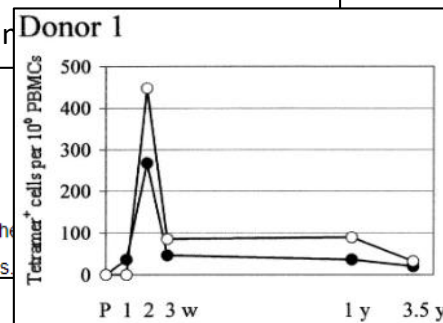
Quantitation of CD8+ T Cell Responses to Newly Identified HLA-A*0201–restricted T Cell Epitopes Conserved Among Vaccinia and Variola (Smallpox) Viruses

Masanori Terajima, John Cruz, Gregory Raines, Elizabeth D. Kilpatrick, Jeffrey S. Krenzelok, Francis A. Ennis

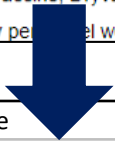
Materials And Methods

Donors.

Donors in this study were three HLA-A*0201–positive laboratory workers received primary immunization by scarification with the licensed smallpox vaccine, Dryvax®, as recommended by the Centers for Disease Control and Prevention for laboratory personnel working with vaccinia viruses.



| | | | |
|---------|-------------------|-------------------|------------------------|
| Epitope | Structure | Name | 74A |
| | | Chemical Type | Peptide / Protein |
| | | Sequence | CLTEYILWV |
| | | Domain / Region | Defined Epitope |
| | Source | Species | Vaccinia Virus Ankara |
| | | Strain | Ankara (MVA) |
| | | Antigen | Putative 21.7k protein |
| | | Antigen Accession | 2772819 |
| | Antigen Positions | 79-87 | |
| Context | Immunization | Immunized Species | Homo sapiens |
| | | Immunogen Type | Source species |
| | | Administration | Scarification |
| | Assay | Antigen Type | Epitope |
| | | Assay Type | ELISPOT |
| | | Response Measured | Cytokine Release-IFN-g |
| | | MHC Allele | HLA-A*0201 |



Literature curation

PubMed / PDB

- Complex query
- Bi-weekly

240K retrieved

Classifier

- Content based categories
- Retrained annually

151K epitope related

Abstract Review

- Manual scan
- Confirmation of classification

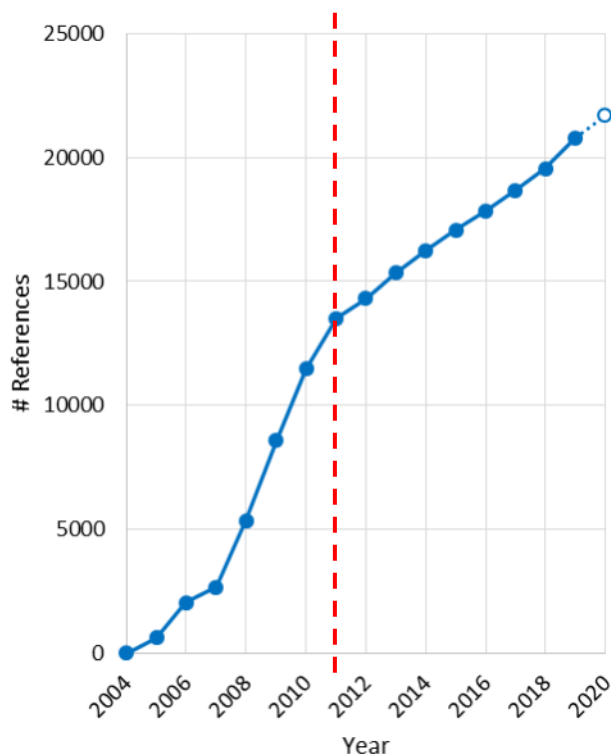
44K likely curatable

Manual Curation

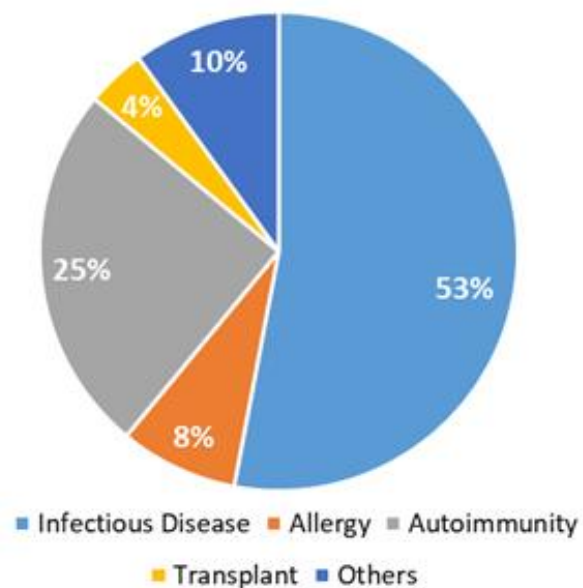
- Assigned to curators
- Peer review

21K curated


Growth of Curated References



Categorical Breakdown of Curated References



IEDB.org: homepage & cumulative data



**IMMUNE EPITOPE DATABASE
AND ANALYSIS RESOURCE**

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[Specialized Searches](#)

[Analysis Resource](#)

Welcome

The Immune Epitope Database (IEDB) is a freely available resource funded by NIAID. It catalogs experimental data on antibody and T cell epitopes studied in humans, non-human primates, and other animal species in the context of infectious disease, allergy, autoimmunity and transplantation. The IEDB also hosts tools to assist in the prediction and analysis of epitopes.

[Learn More](#)

Upcoming Events

| | |
|--|-----------|
| An IEDB Case Study: TB | Sept 3 |
| * webinar recording here | |
| FOCIS Virtual Booth | Oct 28-31 |
| User Workshop | Nov 5-6 |
| * register for workshop here | |

Summary Metrics

| | |
|--------------------------|-----------|
| Peptidic Epitopes | 971,693 |
| Non-Peptidic Epitopes | 3,051 |
| T Cell Assays | 383,614 |
| B Cell Assays | 549,104 |
| MHC Ligand Assays | 2,927,673 |
| Epitope Source Organisms | 3,977 |
| Restricting MHC Alleles | 858 |
| References | 21,579 |

START YOUR SEARCH HERE ?

Epitope ?

Any Epitopes
 Linear Epitope
 Discontinuous Epitopes
 Non-peptidic Epitopes

Ex: SIINFEKL

Assay ?

Positive Assays Only
 T Cell Assays
 B Cell Assays
 MHC Ligand Assays

[Find](#)

Antigen ?

MHC Restriction ?

Any MHC Restriction
 MHC Class I
 MHC Class II
 MHC Nonclassical

[Find](#)

Host ?

Any Host
 Humans
 Mice
 Non-human Primates

[Find](#)

Disease ?

Any Disease
 Infectious Disease
 Allergic Disease
 Autoimmune Disease

[Find](#)

[Reset](#) [Search](#)

Epitope Analysis Resource

T Cell Epitope Prediction ?

Scan an antigen sequence for amino acid patterns indicative of:

- [MHC I Binding](#)
- [MHC II Binding](#)
- [MHC I Processing \(Proteasome, TAP\)](#)
- [MHC I Immunogenicity](#)

B Cell Epitope Prediction ?

Predict linear B cell epitopes using:

- [Antigen Sequence Properties](#)

Predict discontinuous B cell epitopes using antigen structure via:


- [Discotope](#)
- [ElliPro](#)

Epitope Analysis Tools ?

Analyze epitope sets of:

- [Population Coverage](#)
- [Conservation Across Antigens](#)
- [Clusters with Similar Sequences](#)

IEDB.org: homepage & search interface



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Home
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START YOUR SEARCH HERE ?

Epitope ?

Any Epitopes
 Linear Epitope
 Discontinuous Epitopes
 Non-peptidic Epitopes

Exact IV

Assay ?

Positive Assays Only
 T Cell Assays
 B Cell Assays
 MHC Ligand Assays

Ex: neutralization

Antigen ?

Organism

Antigen Name

MHC Restriction ?

Any MHC Restriction
 MHC Class I
 MHC Class II
 MHC Nonclassical

Ex: HLA-A*02:01

Host ?

Any Host
 Humans
 Mice
 Non-human Primates

Ex: dog, camel

Disease ?

Any Disease
 Infectious Disease
 Allergic Disease
 Autoimmune Disease

Ex: asthma, diabet

Epitope Analysis Resource

T Cell Epitope Prediction ?

Scan an antigen sequence for amino acid patterns indicative of:

- MHC I Binding
- MHC II Binding
- MHC I Processing (Proteasome, TAP)
- MHC I Immunogenicity

B Cell Epitope Prediction ?

Predict linear B cell epitopes using:

- Antigen Sequence Properties

Predict discontinuous B cell epitopes using antigen structure via:

- Discotope
- ElliPro

Epitope Analysis Tools ?

Analyze epitope sets of:

- Population Coverage
- Conservation Across Antigens
- Clusters with Similar Sequences

Example query: HCV T cell epitopes in humans

START YOUR SEARCH HERE ?

Epitope ?

Any Epitopes
 Linear Epitope
 Discontinuous Epitopes
 Non-peptidic Epitopes

Exact M ▾ Ex: SIINFEKL

Assay ?

Positive Assays Only
 T Cell Assays
 B Cell Assays
 MHC Ligand Assays

Ex: neutralization Find

Antigen ?

Organism

Hepatitis C virus (ID:11103, 1)

Antigen Name

Ex: core, capsid, myosin

MHC Restriction ?

Any MHC Restriction
 MHC Class I
 MHC Class II
 MHC Nonclassical

Ex: HLA-A*02:01 Find

Host ?

Any Host
 Humans
 Mice
 Non-human Primates

Ex: dog, camel Find

Disease ?

Any Disease
 Infectious Disease
 Allergic Disease
 Autoimmune Disease

Ex: asthma, diabetes Find

Reset Search

Results summarized in tables

Current Filters: Positive Assays Only Organism: Hepatitis C virus (ID:11103, Hepacivirus C) No B cell assays No MHC ligand assays Host: Homo sapiens (human)

| Epitopes (1684) | Antigens (3) | Assays (4479) | Receptors (376) | References (271) | |
|---|-----------------|--------------------|--------------------|---------------------|----------|
| Go To Records Starting At 1200 <input type="button" value="GO"/> | | | | | |
| 1684 Records Found <input type="button" value="GO"/> Page 1 of 68 <input type="button" value="GO"/> 25 Per Page <input type="button" value="GO"/> | | | | | |
| Details | Epitope | Antigen | Organism | # References | # Assays |
| 6435 | NGVCWTV | Genome polyprotein | Hepatitis C virus | 95 | 256 |
| 32208 | KLVALGINAV | Genome polyprotein | Hepatitis C virus | 87 | 236 |
| 74798 | YLLPRRGPRLL | Genome polyprotein | Hepatitis C virus | 34 | 71 |
| 3019 | ALYDVVTKL | Genome polyprotein | Hepatitis C virus | 29 | 63 |
| 9203 | DLMGYIPLV | Genome polyprotein | Hepatitis C virus | 26 | 40 |
| 37286 | LLFNILGGWV | Genome polyprotein | Hepatitis C virus | 26 | 38 |
| 24762 | HSKCKCDEL | Genome polyprotein | Hepatitis C virus | 20 | 61 |
| 21079 | GLQDCTMLV | Genome polyprotein | Hepatitis C virus | 19 | 25 |
| 4917 | ATDALMTGY | Genome polyprotein | Hepatitis C virus | 17 | 41 |
| 7292 | CVNGVCWTV | Genome polyprotein | Hepatitis C virus | 17 | 34 |
| 716 | ADLMGYIPLV | Genome polyprotein | Hepatitis C virus | 16 | 20 |
| 21757 | GPRLGVRAT | Genome polyprotein | Hepatitis C virus | 16 | 27 |
| 37097 | LLALLSCLTV | Genome polyprotein | Hepatitis C virus | 16 | 25 |
| 26954 | ILAGYGAGV | Genome polyprotein | Hepatitis C virus | 14 | 17 |
| 4197 | ARMILMTHF | Genome polyprotein | Hepatitis C virus | 13 | 30 |
| 27011 | ILDSFDPLV | Genome polyprotein | Hepatitis C virus | 13 | 15 |
| 59336 | SLMAFTAAV | Genome polyprotein | Hepatitis C virus | 13 | 15 |
| 24479 | HPNIEEVAL | Genome polyprotein | Hepatitis C virus | 12 | 20 |
| 32209 | KLVALGVNAV | Genome polyprotein | Hepatitis C virus | 11 | 18 |
| 37127 | LLCPAGHAV | Genome polyprotein | Hepatitis C virus | 11 | 14 |
| 4916 | ATDALMTGF | Genome polyprotein | Hepatitis C virus | 10 | 15 |
| 32167 | KLSGLGLNAV | Genome polyprotein | Hepatitis C virus | 10 | 28 |
| 59240 | SLLAPGAKQNV | Genome polyprotein | Hepatitis C virus | 10 | 11 |
| 69751 | VLSDFKTWL | Genome polyprotein | Hepatitis C virus | 9 | 12 |
| 32165 | KLSGLGINAV | Genome polyprotein | Hepatitis C virus | 8 | 53 |
| 1684 Records Found <input type="button" value="GO"/> Page 1 of 68 <input type="button" value="GO"/> 25 Per Page <input type="button" value="GO"/> | | | | | |
| Go To Records Starting At 1200 <input type="button" value="GO"/> | | | | | |






Detail pages summarize relevant information

| EPITOPE SUMMARY |
|---|
| CINGVCWTV is a linear peptidic epitope (epitope ID 6435) studied as part of Genome polyprotein from Hepatitis C virus. This epitope has been studied for immune reactivity in 116 publication(s), tested in 324 T cell assays, 1 B cell assay, 15 MHC ligand assays and has 3D structure(s) 3MRG. |

| COMPILED DATA | |
|-------------------------------|----------------|
| MHC Ligand Assay(s) 15 | |
| MHC molecule | Positive / All |
| HLA-A*02:01 | 8/9 |
| HLA-A2 | 2/2 |
| HLA-A*02:02 | 1/1 |
| HLA-A*02:06 | 1/1 |
| HLA-A*68:02 | 1/1 |
| HLA-A*02:03 | 0/1 |
| B Cell Assay(s) 1 | |
| Assay Type | Positive / All |
| qualitative binding | 0/1 |
| T Cell Assay(s) 324 | |
| Assay Type | Positive / All |
| IFNg release | 101/115 |
| qualitative binding | 85/89 |
| cytotoxicity | 44/46 |
| IL-2 release | 20/22 |
| TNFa release | 16/16 |
| CCL4/MIP-1b release | 10/10 |
| proliferation | 7/8 |
| degranulation | 3/4 |
| IL-4 release | 2/4 |
| IL-10 release | 3/3 |
| granzyme B release | 1/3 |
| IL-17A release | 1/1 |
| IL-22 release | 1/1 |
| perforin release | 1/1 |
| TNF release | 1/1 |

Also available for:

- Assays
- Receptors
- References

| EXTERNAL RESOURCES | |
|---|--|
| Resource | Link |
|  ANALYSIS TOOLS IEADB.ORG IEDB-AR: MHC-I Processing 🔗 | Predict MHC class I processing 🔗 |
|  ANALYSIS TOOLS IEADB.ORG IEDB-AR: MHC-I 🔗 | Predict MHC class I binding affinity 🔗 |
|  ANALYSIS TOOLS IEADB.ORG IEDB-AR: B cell scales 🔗 | Predict B cell epitopes 🔗 |

Antigens: identifying protein source of epitopes

Current Filters: Positive Assays Only Organism: Hepatitis C virus (ID:11103, Hepacivirus C) No B cell assays No MHC ligand assays Host: Homo sapiens (human)

Epitopes (1684) Antigens (3) Assays (4479) Receptors (376) References (271)


Go To Records Starting At [Export Results](#)

3 Records Found Page 1 of 1 25 Per Page

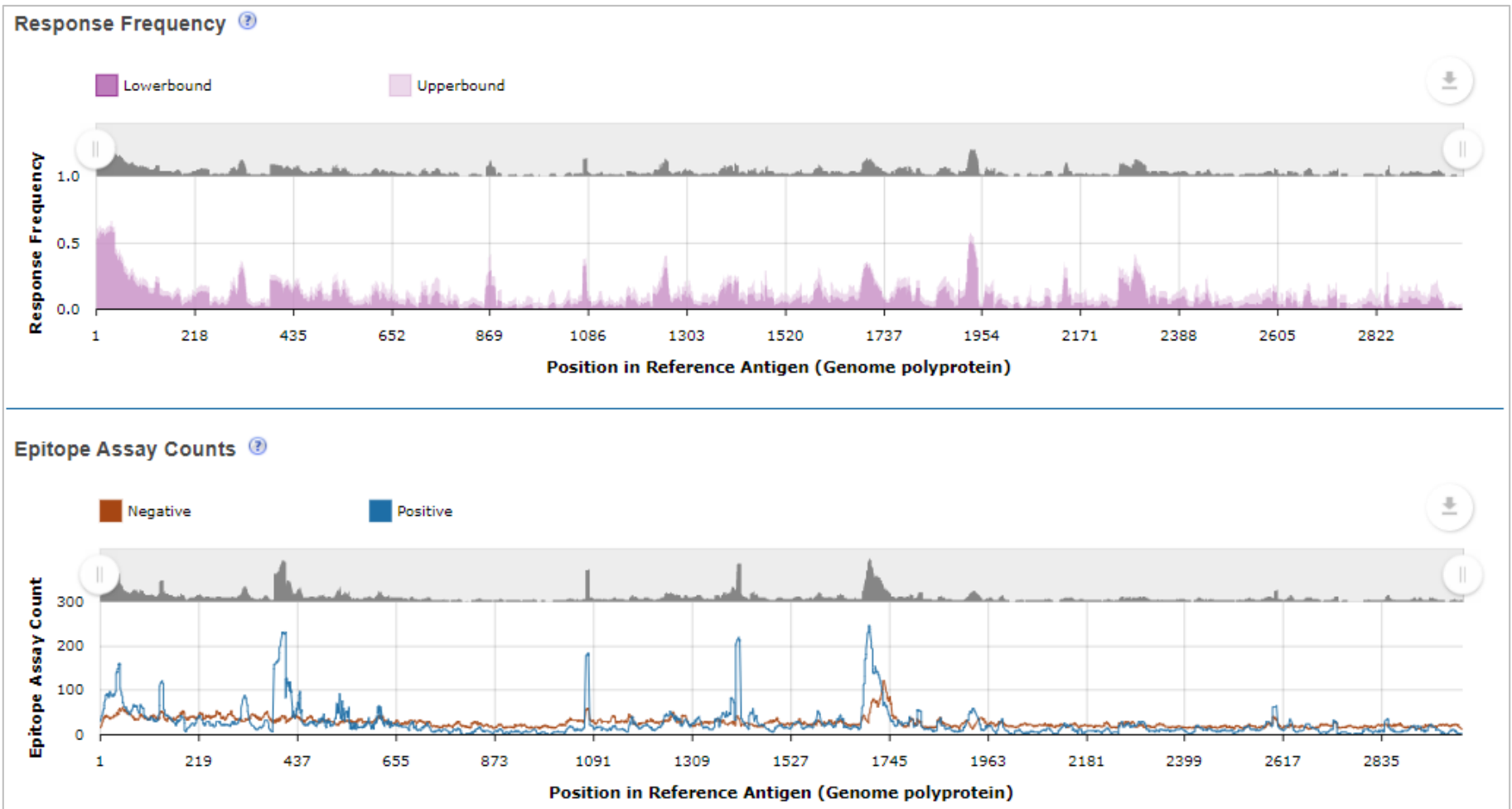
| Antigen | Organism | # Epitopes | # Assays | # References |
|---------------------------------|-------------------|------------|----------|--------------|
| Genome polyprotein | Hepatitis C virus | 1672 | 4412 | 269 |
| Other Hepatitis C virus protein | Hepatitis C virus | 13 | 43 | 6 |
| F protein | Hepatitis C virus | 8 | 24 | 3 |

3 Records Found Page 1 of 1 25 Per Page

Go To Records Starting At [Export Results](#)



ImmunomeBrowser: visualization on reference proteins



Also available as a standalone tool on AR!

Assays: experiments in which epitopes were tested

Current Filters: Positive Assays Only Organism: Hepatitis C virus (ID:11103, Hepacivirus C) No B cell assays No MHC ligand assays Host: Homo sapiens (human)

| Epitopes (1684) | | Antigens (3) | | Assays (4479) | | Receptors (376) | | References (271) | |
|--|---|--|--------------|---|--|--------------------------|-----------------|---|--|
| T Cell Assays (4479) | | B Cell Assays (0) | | MHC Ligand Assays (0) | | | | | |
| Go To Records Starting At <input type="text" value="A,b"/> <input type="button" value="GO"/> | | | | | | | | | |
| 4479 Records Found <input type="button" value="Previous"/> <input type="button" value="Next"/> Page <input type="text" value="1"/> of 180 <input type="button" value="Previous"/> <input type="button" value="Next"/> <input type="text" value="25"/> Per Page <input type="button" value="Export Results"/> | | | | | | | | | |
| ID | Reference | Epitope | Host | Immunization | Assay Antigen | Antigen Epitope Relation | MHC Restriction | Assay Description | |
| 1845030 | Matthew F Cusick; Clin Dev Immunol 2011 | VIKGGRRHLIFCHP KKKCD polyprotein [Hepatitis C virus] (87-104) Hepacivirus C | Homo sapiens | Infectious disease via exposure to Hepacivirus C (Source Organism) | VIKGGRRHLIFCHP KKKCD polyprotein [Hepatitis C virus] (87-104) Hepacivirus C | Epitope | HLA-DRB1*15:01 | 3H-thymidine proliferation Positive-Low | |
| 1845031 | Matthew F Cusick; Clin Dev Immunol 2011 | VIKGGRRHLIFCHS EKKCD polyprotein Hepacivirus C | Homo sapiens | Infectious disease via exposure to Hepacivirus C (Source Organism) | VIKGGRRHLIFCHS EKKCD polyprotein Hepacivirus C | Epitope | HLA-DRB1*15:01 | 3H-thymidine proliferation Positive-Low | |
| 1845029 | Matthew F Cusick; Clin Dev Immunol 2011 | VIKGGRRHLIFCRS KKKCD NS3 (5-22) Hepacivirus C | Homo sapiens | Infectious disease via exposure to Hepacivirus C (Source Organism) | VIKGGRRHLIFCRS KKKCD NS3 (5-22) Hepacivirus C | Epitope | HLA-DRB1*15:01 | 3H-thymidine proliferation Positive-Low | |
| 1320094 | J T Gerlach; J Virol 2005 | AAYAAQGYKVLVL NP SVAAT polyprotein (1242- 1261) Hepacivirus C | Homo sapiens | Infectious disease via exposure to Hepacivirus C (Source Organism) | AAYAAQGYKVLVL NP SVAAT polyprotein (1242- 1261) Hepacivirus C | Epitope | HLA class II | 3H-thymidine proliferation Positive | |
| 1328498 | V Lamonaca; Hepatology 1999 | ADLMGYIPLVGAP LG GAARA Genome polyprotein (131- | Homo sapiens | Infectious disease via exposure to Hepacivirus C (Taxonomic Parent) | ADLMGYIPLVGAP LG GAARA Genome polyprotein (131- 150) | Epitope | HLA class II | 3H-thymidine proliferation Positive | |

Epitope-specific B cell and T cell receptors

Current Filters: ✖ Positive Assays Only ✖ Organism: Hepatitis C virus (ID:11103, Hepacivirus C) ✖ No B cell assays ✖ No MHC ligand assays ✖ Host: Homo sapiens (human)

Epitopes (1684) Antigens (3) Assays (4479) Receptors (376) References (271)

T Cell Receptors (378) B Cell Receptors (0)

Go To Records Starting At 1200 Export Results

376 Records Found Page 1 of 16 25 Per Page

| Group ID | Species | Type | Chain 1 CDR3 | Chain 2 CDR3 |
|----------|----------------------|------|---------------|------------------|
| 636 | Homo sapiens (human) | αβ | ALSDPVNDR | ASSLRGRGDQPQH |
| 1623 | Homo sapiens (human) | αβ | AVEDTGGFKTI | ASSSMESGNTIY |
| 1624 | Homo sapiens (human) | αβ | AMREHTSGTYKYI | ASSDSLVRGYQETQY |
| 1625 | Homo sapiens (human) | αβ | AFMITGAGSYQLT | ASSLQEWDPNRYGYT |
| 1626 | Homo sapiens (human) | αβ | ALSVVNQAGTALI | ASSLVENTEAF |
| 8500 | Homo sapiens (human) | αβ | not available | ASSQGGDRGDPGDGYT |
| 16605 | Homo sapiens (human) | αβ | not available | ASTRDTEAF |
| 17790 | Homo sapiens (human) | αβ | not available | ASSLSGTGELF |
| 17791 | Homo sapiens (human) | αβ | not available | SAPGPGVSVEKLF |
| 17792 | Homo sapiens (human) | αβ | not available | ASSSGQGNIQY |
| 17793 | Homo sapiens (human) | αβ | not available | ASSQEPSGSWGEQY |
| 17794 | Homo sapiens (human) | αβ | not available | ASSQAAGVGYPTAEF |
| 17795 | Homo sapiens (human) | αβ | not available | AISRDSIQFGNTIY |
| 17796 | Homo sapiens (human) | αβ | not available | ASSQEQGAPGELF |
| 17797 | Homo sapiens (human) | αβ | not available | ASSRGPDEAF |
| 17798 | Homo sapiens (human) | αβ | not available | ASSFGDQQY |
| 17799 | Homo sapiens (human) | αβ | not available | ATSDQSREQY |
| 17800 | Homo sapiens (human) | αβ | not available | ASSYLFGDANTGELF |
| 17801 | Homo sapiens (human) | αβ | not available | ASSLTCDRTHSVYGYT |
| 17802 | Homo sapiens (human) | αβ | not available | AWRLGSGEKLF |
| 17803 | Homo sapiens (human) | αβ | not available | SAWTGSATEAF |
| 17804 | Homo sapiens (human) | αβ | not available | ASSLGTQTYEQY |
| 17805 | Homo sapiens (human) | αβ | not available | ATSDAPGTGIPYEYQY |
| 17806 | Homo sapiens (human) | αβ | not available | ASSPGTSDPANYGYT |
| 17807 | Homo sapiens (human) | αβ | not available | ASSDPLAGNEQY |


376 Records Found Page 1 of 16 25 Per Page

Go To Records Starting At 1200 Export Results

References: source of information


Pending Filters

Reset Search

Epitope 


Any Epitopes
 Linear Epitope
 Discontinuous Epitopes
 Non-peptidic Epitopes

3D structure available
 Amino Acid Modification

Antigen 


Organism

Antigen Name


Receptor 

Has receptor sequence
 Type:

Chain:
 Sequence:

Assay 


Positive Assays Only
 T Cell Assays
 B Cell Assays
 MHC Ligand Assays

MHC Restriction 

Any MHC Restriction
 MHC Class I

Current Filters: ✖ Positive Assays Only ✖ Organism: Hepatitis C virus (ID:11103, Hepacivirus C) ✖ No B cell assays ✖ No MHC ligand assays ✖ Host: Homo sapiens (human)


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|--------------------|-----------------|------------------|--------------------|---------------------|
|--------------------|-----------------|------------------|--------------------|---------------------|

Go To Records Starting At 1982 GO Export Results 

271 Records Found Page 1 of 11 ▶▶ 25 Per Page

| Ref ID | PMID | Author | Title | Abstract | Date |
|---------|----------|--|---|--|------|
| 1035030 | 30769005 | Janine Kemming; Emma Reeves; Katja Nitschke; Vanessa Widmeier; Florian Emmerich; Tobias Hermle; Emma Gostick; Andreas Walker; Jörg Timm; David A Price; Malke Hofmann; Robert Thimme; Edward James; Christoph Neumann-Haefelin | ERAP1 allotypes shape the epitope repertoire of virus-specific CD8 ⁺ T cell responses in acute hepatitis C virus infection. | BACKGROUND & AIMS: Endoplasmic reticulum aminopeptidase 1 (ERAP1) polymorphisms are linked with human leukocyte antigen (HLA) class I-associated autoinflammatory disorders, including ankylosing spondy... more... | 2019 |
| 1034808 | 30622109 | Anita Schuch; Elahe Salimi Alizei; Kathrin Heim; Dominik Wieland; Michael Muthamia Kiraithe; Janine Kemming; Stan Llewellyn-Lacey; Özlem Sogukpinar; Yi Ni; Stephan Urban; Peter Zimmermann; Michael Nassal; Florian Emmerich; David A Price; Bertram Bengsch; Hendrik Luxenburger; Christoph Neumann-Haefelin; Malke Hofmann; Robert Thimme | Phenotypic and functional differences of HBV core-specific versus HBV polymerase-specific CD8 ⁺ T cells in chronically HBV-infected patients with low viral load. | OBJECTIVE: A hallmark of chronic HBV (cHBV) infection is the presence of impaired HBV-specific CD8 ⁺ T cell responses. Functional T cell exhaustion induced by persistent antigen stimulation is consider... more... | 2019 |
| 1035306 | 30972915 | Kamila Caraballo Cortés; Sylvia Osuch; Karol Perlejewski; Agnieszka Pawelczyk; Justyna Kaźmierczak; Maciej Janiak; Joanna Jabłońska; Khalil Nazzal; Anna Stelmaszczyk-Emmel; Hanna Berak; Iwona Bukowska-Oško; Marcin Paciorek; Tomasz Laskus; Marek Radkowski | Expression of programmed cell death protein 1 and T-cell immunoglobulin- and mucin-domain-containing molecule-3 on peripheral blood CD4 ⁺ CD8 ⁺ double positive T cells in patients with chronic hepatitis C virus infection and in subjects who spontaneously cleared the virus. | Chronic hepatitis C virus (HCV) infection is characterized by increased proportion of CD4 ⁺ CD8 ⁺ double positive (DP) T cells, but their role in this infection is unclear. In chronic hepatitis C, immune... more... | 2019 |
| 1034271 | 30260541 | Youchen Xia; Wen Pan; Xiaoyu Ke; Kathrin Skibbe; Andreas Walker; Daniel Hoffmann; Yiping Lu; Xuecheng Yang; Xuemei Feng; Qiaoxia Tong; Jörg Timm; Dongliang Yang | Differential escape of HCV from CD8 ⁺ T cell selection pressure between China and Germany depends on the presenting HLA class I molecule. | Adaptation of hepatitis C virus (HCV) to CD8 ⁺ T cell selection pressure is well described, however, it is unclear if HCV differentially adapts in different populations. Here, we studied HLA... more... | 2019 |
| 1033512 | 29397015 | Hendrik Luxenburger; Franziska Graß; Janina Baermann; Tobias Boettler; Matthias Marget; Florian Emmerich; Marcus Panning; Robert Thimme; Katja Nitschke; Christoph Neumann-Haefelin | Differential virus-specific CD8 ⁺ T-cell epitope repertoire in hepatitis C virus genotype 1 versus 4. | Virus-specific CD8 ⁺ T-cell responses play an important role in the outcome of hepatitis C virus (HCV) infection. To date, most HCV-specific CD8 ⁺ T-cell epitopes have been defined... more... | 2018 |
| 1033499 | 30053426 | Leah V Sibener; Ricardo A Fernandes; Elizabeth M Kolawole; Catherine B Carbone; Fan Liu; Darren McAfee; Michael E Birnbaum; Xinbo Yang; Laura F Su; Wong Yu; Shen Dong; Marvin H Gee; Kevin M Jude; Mark M Davis; Jay T Groves; William A Goddard 3rd; James R Heath; Brian D Evavold; Ronald D Vale; K Christopher Garcia | Isolation of a Structural Mechanism for Uncoupling T Cell Receptor Signaling from Peptide-MHC Binding. | TCR-signaling strength generally correlates with peptide-MHC binding affinity; however, exceptions exist. We find high-affinity, yet non-stimulatory, interactions occur with high frequency in the huma... more... | 2018 |
| 1032898 | 29429978 | Slobodan Culina; Ana Ines Lalanne; Georgia Afonso; Karen Cerosaletti; | Islet-reactive CD8 ⁺ T cell frequencies in the pancreas, but not in blood. | The human leukocyte antigen-A2 (HLA-A2)-restricted zinc transporter | 2018 |

Help integrated throughout the website



IMMUNE EPITOPE DATABASE
AND ANALYSIS RESOURCE

Help
More IEDB

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[Learn More](#)

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Epitope ? Limit search results by epitope type or sequence. [Learn More](#)


Any Epitope

Linear Epitope

Exact ID Ex: SIINFEKL

Discontinuous Epitopes

Non-peptidic Epitopes

T Cell Assays Only 

T Cell Assays

B Cell Assays

MHC Ligand Assays

Ex: neutralization

Epitope Analysis Resource

T Cell Epitope Prediction ?

Scan an antigen sequence for amino acid patterns indicative of:

- MHC I Binding
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- MHC I Processing (Proteasome, TAP)
- MHC I Immunogenicity

B Cell Epitope Prediction ?

Predict linear B cell epitopes using:

- [Antigen Sequence Properties](#)

Predict discontinuous B cell epitopes using antigen structure via:

- [Discotope](#)
- [ElliPro](#)

Epitope Analysis Tools ?

Analyze epitope sets of:

- [Population Coverage](#)
- [Conservation Across Antigens](#)
- [Clusters with Similar Sequences](#)

Upcoming Events

| | |
|--|-----------|
| An IEDB Case Study: TB | Sept 3 |
| * webinar recording here | |
| FOCIS Virtual Booth | Oct 28-31 |
| User Workshop | Nov 5-6 |
| * register for workshop here | |

Summary Metrics

| | |
|--------------------------|-----------|
| Peptidic Epitopes | 971,693 |
| Non-Peptidic Epitopes | 3,051 |
| T Cell Assays | 383,614 |
| B Cell Assays | 549,104 |
| MHC Ligand Assays | 2,927,673 |
| Epitope Source Organisms | 3,977 |
| Restricting MHC Alleles | 858 |
| References | 21,579 |

Antigen ?

Organism 

Ex: influenza, peanut

Antigen Name

MHC Restriction ?

Any MHC Restriction 

MHC Class I

MHC Class II

MHC Nonclassical

Ex: HLA-A*02:01

Host ?

Any Host 

Humans

Mice

Non-human Primates

Ex: dog, camel

Disease ?

Any Disease 

Infectious Disease

Allergic Disease

Autoimmune Disease

Ex: asthma, diabetes

Solution Center: help.iedb.org

Accessible through header and footer on every page or submit via email to help@iedb.org

The screenshot shows the IEDB Solutions Center Forum homepage. At the top, there is a search bar with a magnifying glass icon and the text "Search". Below the search bar is the main heading "IEDB Solutions Center Forum". Underneath, there are three main categories: "IEDB Publications" (with a subtext "IEDB-related publications authored by members of the IEDB team"), "General", and "Future features" (with a subtext "Possible new features or enhancements to existing ones derived from user help requests"). Below these categories is a section titled "Promoted articles" which lists several articles in a grid format, including "Comprehensive Review of Human Plasmodium falciparum-Specific CD8+ T Cell Epitopes (2019)", "Citing the IEDB", "Getting Started", "IEDB Annual Compendium for 2018", "2019 User Workshop", "IEDB FAIRness", "IEDB Outreach Events for 2019", "IEDB Analysis Resource v2.21 release notes (26 Mar 2019)", "IEDB v3.10.0 release notes", "IEDB v3.10.0 release notes", "IEDB v3.6.0 Release Notes (16 December 2016)", "IEDB 3.3 Release Notes (5 February 2016)", "IEDB User Documentation Release 3", "User Workshop Webcasts", and "A New Format for the Details Pages".

The screenshot shows the "Submit a request" form in the IEDB Solutions Center. At the top right, there are links for "Submit a request" and "Sign in". Below the navigation is a search bar with a magnifying glass icon and the text "Search". The main heading is "Submit a request". The form contains several fields: "Your email address*" (with a text input field), "Subject*" (with a text input field), and "Description*" (with a large text area). Below the description field, there is a note: "Please enter the details of your request. A member of our support staff will respond as soon as possible." Underneath this note is an "Attachments" section with a text input field and a button labeled "Add file or drop files here". At the bottom of the form is a blue "Submit" button.

Our goals for this user workshop

We want your input to make the IEDB better:

- Learn about real-life applications for the IEDB
- Identify and prioritize problems with the user interface, documentation, functionality etc.

We want to enable you to get the most out of the IEDB:

- The primary IEDB success metric is usage
- Best compliment for our program is if IEDB data & tools help in your research (citations)