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Systems And Methods For Performing Peptide Exchange Reactions Using Placeholder Peptides And Catalytic Amounts Of The Molecular Chaperone TAPBPR

Tech ID: 33064 / UC Case 2020-297-0

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OTHER INFORMATION

KEYWORDS

MHC-I, Class I MHC, Antigenic Peptide, Peptide Receptive MHC, MHC multimers, MHC tetramers, MHC reagents, Major Histocompatibility Complex, Class I, Chaperone, TAPBPR, Catalytic TAPBPR

CATEGORIZED AS

- ▶ **Materials & Chemicals**
 - ▶ Biological
- ▶ **Research Tools**
 - ▶ Reagents

RELATED CASES

2020-297-0, 2018-408-0, 2020-251-0, 2020-284-0, 2019-975-0

BACKGROUND

Tech ID 32985/Case number 2018-408 describes the generation of E. coli expressed, peptide receptive MHC-I monomers and multimers using the TAPBPR chaperone.

In this case, the technology was improved based upon the surprising discovery that the TAPBPR chaperone acts catalytically on MHC-I-placeholder peptide complexes to create peptide receptive MHC-I species.

TECHNOLOGY DESCRIPTION

Technology is identical to that described in 2018-408-0, except that the ratio of TAPBPR to MHC-I-placeholder peptide complex is less than 1:1. As low as a 1:10,000 ratio of TAPBPR to MHC-I placeholder peptide can be used without an effect on the overall reaction time.

APPLICATIONS

Peptide receptive MHC-I multimer reagents

MHC-I reagents

Identifying antigenic peptides

Identifying and purifying T cell populations

ADVANTAGES

Improved cost effectiveness of making MHC Class I reagents because less of the TAPBPR component needs to be made.

Additional patent claims close off potential loophole in coverage

INTELLECTUAL PROPERTY INFORMATION

Country	Type	Number	Dated	Case
United States Of America	Published Application	20230059548	02/23/2023	2019-975
European Patent Office	Published Application	EP 4 136 098	02/22/2023	2020-284
European Patent Office	Published Application	4085069	11/09/2022	2019-975
European Patent Office	Published Application	4085068	11/09/2022	2020-297
European Patent Office	Published Application	402841.2	07/20/2022	2020-251
United States Of America	Published Application	20210371499	12/20/2021	2020-284
United States Of America	Published Application	20210155670	05/27/2021	2020-251

Additional Patents Pending

RELATED MATERIALS

- ▶ [Molecular determinants of chaperone interactions on MHC-I for folding and antigen repertoire selection - 12/17/2019](#)

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Systems And Methods For Generating Peptide Deficient Hla-A*68:02 And Hla-A*24:02 Molecules](#)
- ▶ [SYSTEMS AND METHODS FOR IDENTIFICATION OF MHC-I PEPTIDE EPITOPES USING MULTIPLEXED PEPTIDE RECEPTIVE MHC-I/CHAPERONE COMPLEXES](#)

