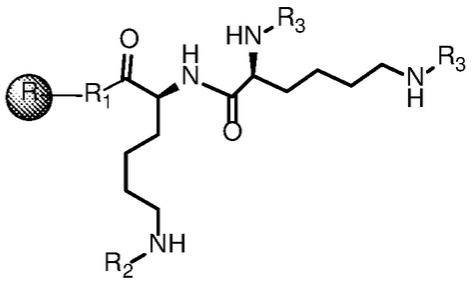
CLAIMS

1. An RMBL resin, characterized in that, its structure is as shown in Formula (I):



Formula (I)

Wherein, Ⓡ is connected with H to form an amine methyl (AM) resin or a cleavable peptide synthesis resin;

R_1 is none;

or a short PEG chain with a carboxyl group at the C-terminus which can condense with Ⓡ and an amino group at the N-terminus which can subsequently condense with the carboxyl group of the backbone lysine;

or a short peptide with a carboxyl group at the C-terminus which can condense with Ⓡ and an amino group at the N-terminus which can subsequently condense with the carboxyl group of the backbone lysine;

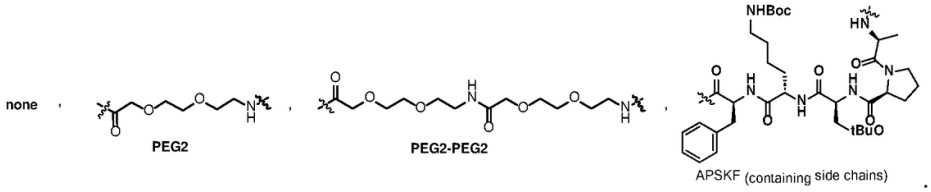
R_2 is a peptide synthesis handle;

R_3 is a fragment with an activator analog, with a carboxyl group at the C-terminus connected to OH, which can condense with the amino group of the backbone Lys, and β-alanine can be used as a spacer inserted between the amide bonds.

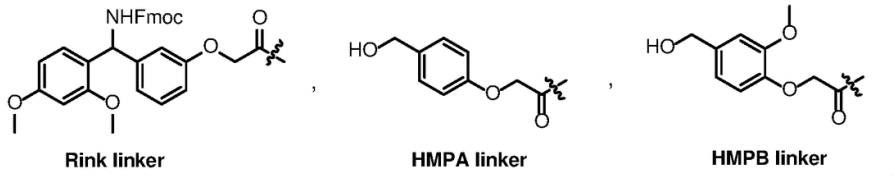
2. The RMBL resin as claimed in claim 1, characterized in that, Ⓡ connected with H is selected from: AM resin, AM PEGA resin, AM PEGMatrix resin.

3. The RMBL resin as claimed in claim 1, characterized in that, Ⓡ connected with H is selected from: Rink resin, HMPA resin, HMPB resin.

4. The RMBL resin as claimed in claim 1, characterized in that, the R_1 is selected from:

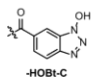


5. The RMBL resin as claimed in claim 1, characterized in that, the R_2 is selected from:

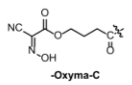


Rink linker , HMPA linker , HMPB linker .

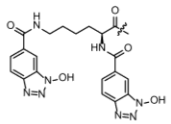
6. The RMBL resin as claimed in claim 1, characterized in that, the R_3 is selected from:



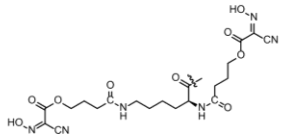
-HOBt-C



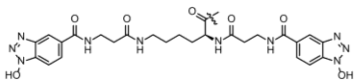
-Oxyma-C



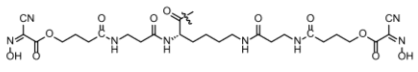
-Lys (HOBt-C)$_2$



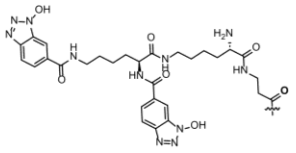
-Lys (Oxyma-C)$_2$



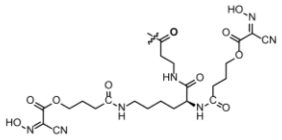
-Lys (β-Ala-HOBt-C)$_2$



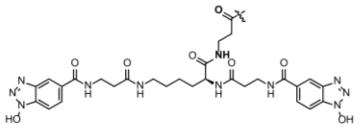
-Lys (β-Ala-Oxyma-C)$_2$



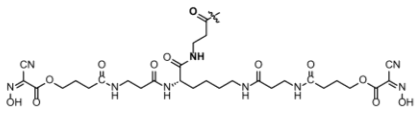
β-Ala-Lys (HOBt-C)$_2$



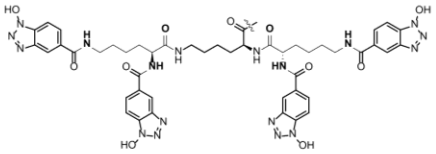
β-Ala-Lys (Oxyma-C)$_2$



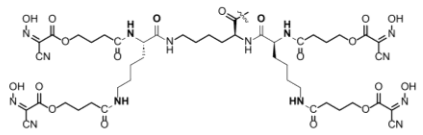
β-Ala-Lys (β-Ala-HOBt-C)$_2$



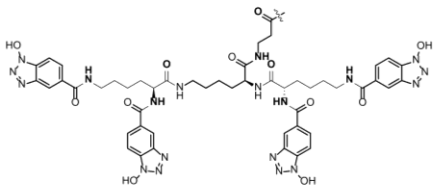
β-Ala-Lys (β-Ala-Oxyma-C)$_2$



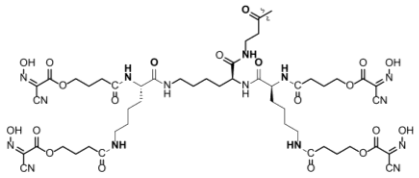
-Lys (Lys-(-HOBt-C)$_2$)$_2$



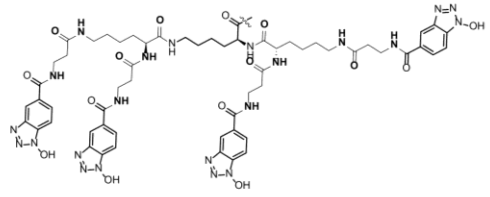
-Lys (Lys-(-Oxyma-C)$_2$)$_2$



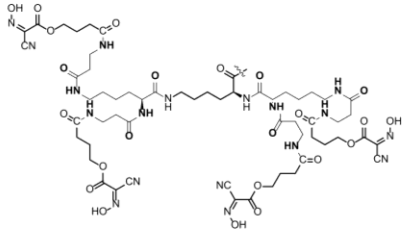
β-Ala-Lys (Lys-(-HOBt-C)$_2$)$_2$



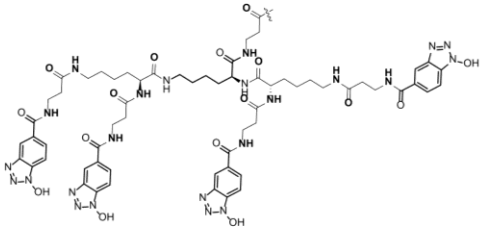
β-Ala-Lys (Lys-(-Oxyma-C)$_2$)$_2$



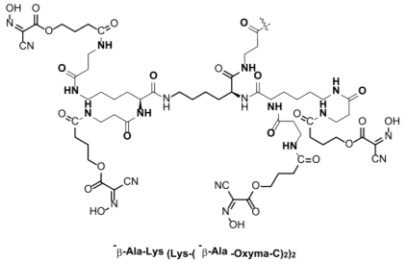
-Lys (Lys-(β-Ala -HOBt-C)$_2$)$_2$



-Lys (Lys-(β-Ala -Oxyma-C)$_2$)$_2$



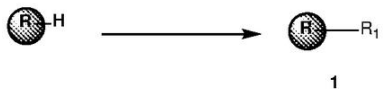
β-Ala-Lys (Lys-(β-Ala -HOBt-C)$_2$)$_2$



β-Ala-Lys (Lys-(β-Ala -Oxyma-C)$_2$)$_2$

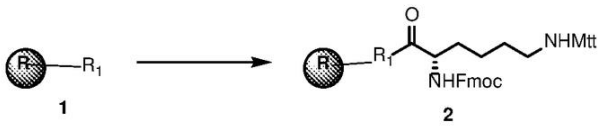
7. A preparation method for the RMBL resin according to any one of claims 1-6, characterized in that, the synthesis route is as follows:

（1）



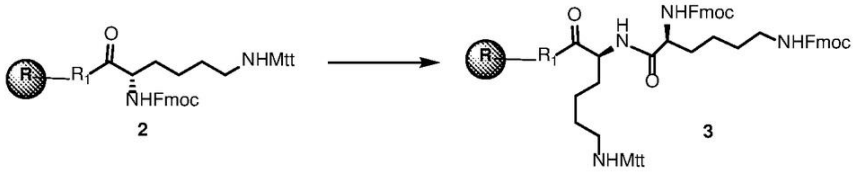
1

（2）



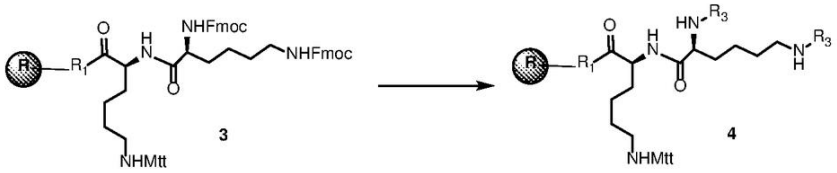
1 2

（3）



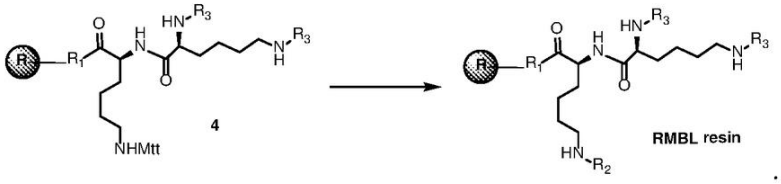
2 3

（4）



3 4

（5）



4 RMBL resin

8. The preparation method as claimed in claim 7, characterized in that, the specific synthesis steps are:

(1) Starting with  resin as the initial raw material, condense R_1 to obtain compound **1**;

(2) After removing the N-9-fluorenylmethoxycarbonyl protecting group from compound **1**, condense N-9-fluorenylmethoxycarbonyl-N'-methyltrityl-L-lysine to obtain compound **2**;

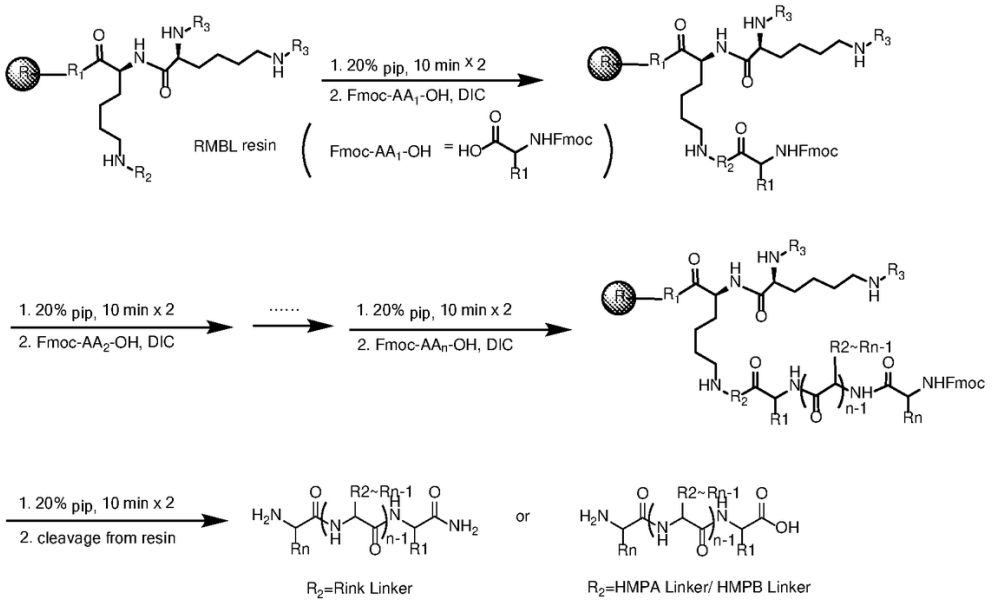
(3) After removing the N-9-fluorenylmethoxycarbonyl protecting group from compound **2**, condense N,N'-9-fluorenylmethoxycarbonyl-L-lysine to obtain compound **3**;

(4) After removing the N-9-fluorenylmethoxycarbonyl protecting group from compound **3**, condense each amide bond between R_3 from the C-terminal to obtain compound **4**;

(5) After removing the N-methyltrityl protecting group from compound 4, condense R_2 to obtain the RMBL resin.

9. The application of the RMBL resin according to any one of claims 1-6 in solid-phase peptide synthesis.

10. The application as claimed in claim 9, characterized in that, the route for synthesizing peptides with the RMBL resin is:



Wherein, n represents the number of amino acids in the synthesized peptide sequence, n>1; R_{n-1} refers to the R group of the side chain of the $(n-1)^{th}$ amino acid, and R_n refers to the R group of the side chain of the n^{th} amino acid.

11. A method for preparing peptide compounds, comprising performing solid-phase peptide synthesis using an RMBL resin according to claim 1.

12. The method according to claim 11, wherein peptide compounds having different amino acid sequences are prepared using the RMBL resin.

13. A method for preparing a peptide library, comprising preparing peptide compounds having different amino acid sequences according to the method of claim 11 or 12.