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**Suga et al.**

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(54) **METHOD FOR CONSTRUCTING LIBRARIES OF NON-STANDARD PEPTIDE COMPOUNDS COMPRISING N-METHYL AMINO ACIDS AND OTHER SPECIAL (NON-STANDARD) AMINO ACIDS AND METHOD FOR SEARCHING AND IDENTIFYING ACTIVE SPECIES**

(2013.01); *C40B 40/10* (2013.01); *C40B 50/06* (2013.01); *C12N 15/67* (2013.01); *C40B 20/04* (2013.01); *G01N 2500/00* (2013.01); *G01N 2500/20* (2013.01)

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See application file for complete search history.

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) **ABSTRACT**

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(Continued)

A method for screening a non-standard peptide compound in the peptide library that binds to the target substance, comprising the steps: (i) preparing a non-standard peptide library wherein a special (non-standard) amino acid is randomly incorporated into the peptide sequence by a cell-free (in vitro) translation system comprising a tRNA acylated by a special (non-standard) amino acid; (ii) bringing the obtained peptide library in contact with a target substance; and (iii) selecting a non-standard peptide that binds to the target substance as an active peptide.

**12 Claims, 7 Drawing Sheets**

(52) **U.S. Cl.**  
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