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(54) Title: SOLUBLE COMBINATORIAL LIBRARIES

(57) Abstract

The present invention relates to novel soluble combinatorial libraries, comprising a soluble phase in solution attached to a core molecule, and allowing the improved high-yield and efficient production of soluble combinatorial libraries. Some specific examples of the soluble combinatorial libraries claimed herein comprise one or more of the following: amino acids, α-azetide amino acids, triazine dione molecules, γ-lactamtide molecules, δ-lactamthiotide molecules, β-lactam nucleus containing molecules, lycoramine alkaloid nucleus containing molecules, and β-blocker nucleus molecules. Further, a split synthesis technique for generating librairies of combinatorial molecules employs a biphasic macromolecular support which is soluble during the pooling, splitting, and coupling steps but which is insoluble during the washing step. The use of a biphasic macromolecular support in its soluble phase significantly enhances the efficiency and performance of the pooling, splitting, and coupling steps. The use of a biphasic macromolecular support in its insoluble phase significantly enhances the efficiency and performance of the washing step.

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