

By Lauren L Stevens

Sir: This is a request under 37 CFR 1.62 for filing a FWC

Continuation Division Continuation-in-Part

of application Serial No. 07/762,522 filed 18 September 1991

of Methods of synthesizing diverse collections of oligomers

for Dower et al.

38/A
D. Williams
9/25/95
EOT. TO 601807

Applicant understand that this FWC application automatically ABANDONS the parent application.

The amendments to and Declaration for this CIP application are enclosed.

A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27 & 1.28 is enclosed, or

was filed in the above-identified parent application.

Please record the enclosed assignment to _____.

Please amend the specification by inserting before the first line the sentence; This is a Continuation

Division of application Serial No. 07/762,522, filed: 18 Sept 1991

A petition to extend time to respond in the above-identified prior applications complying with the OG Notice of is enclosed.

Please enter the amendment under §1.116 dated January 16, 1995 and unentered in the prior application.

Please cancel claim(s) _____.

Preliminary Amendment.

Claims after Entry of any Amendments, Less any Cancelled

FOR:	(Col. 1) NO. FILED	(Col. 2) NO. EXTRA
BASIC FEE		
TOTAL CLAIMS	20 - 12 =	* 0
INDEP CLAIMS	3 - 2 =	* 0
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENTED		

SMALL ENTITY		OR	OTHER THAN A SMALL ENTITY	
RATE	FEE		RATE	FEE
	\$ 365	OR		\$ 730
x11=	\$	OR	x22=	\$ 0
x38=	\$	OR	x76=	\$
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AFFYMAX TECHNOLOGIES N.V.

Lauren L Stevens

Lauren L. Stevens, Ph.D., Reg. No. 36,691

PATENT 9/94

() original patent application () continuation-in-part
patent application of 48100
Inventor: William J. Dower, et al.

is addressed to the Commissioner of Patents
and Trademarks, Washington, D.C. 20231.

By Jimmy L Smith

For:

Enclosed are:

- 9 sheet(s) of formal informal drawing(s).
- An assignment of the invention to _____
- A signed unsigned Declaration & Power of Attorney.
- A signed unsigned Declaration.
- A power of attorney. (unsigned)
- A verified statement to establish small entity status under 37 CFR 1.9 and 37 CFR 1.27.
- A certified copy of a _____ application.
- Information Disclosure Statement under 37 CFR 1.97.
-

Do not charge the filing fee to the Deposit Account of
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Do charge any other fees under 37 CFR 1.16 or 37 CFR 1.17
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TOWNSEND & TOWNSEND

William M. Smith
William M. Smith
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T&T25NF(2-87)

METHOD OF SYNTHESIZING DIVERSE COLLECTIONS OF OLIGOMERS

Inventors: William J. Dower, a citizen of the United States;
Ronald W. Barrett, a citizen of the United States; and
Mark A. Gallop, a citizen of New Zealand.

Assignee:

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FIELD OF THE INVENTION

10 The present invention relates generally to a general stochastic method for synthesizing random oligomers on particles. A further aspect of the invention relates to the use of identification tags on the particles to facilitate identification of the oligomer sequence.

15 BACKGROUND OF THE INVENTION

The relationship between structure and activity of molecules is a fundamental issue in the study of biological systems. Structure-activity relationships are important in understanding, for example, the function of enzymes, the ways
20 in which cells communicate with each other, as well as cellular control and feedback systems. Certain macromolecules are known to interact and bind to other molecules having a very specific three-dimensional spatial and electronic distribution. Any large molecule having such specificity can be considered a
25 receptor, whether it is an enzyme catalyzing hydrolysis of a metabolic intermediate, a cell-surface protein mediating membrane transport of ions, a glycoprotein serving to identify a particular cell to its neighbors, an IgG-class antibody circulating in the plasma, an oligonucleotide sequence of DNA
30 in the nucleus, or the like. The various molecules which receptors selectively bind are known as ligands.

Many assays are available for measuring the binding affinity of known receptors and ligands, but the information which can be gained from such experiments is often limited by
35 the number and type of ligands which are available. Novel ligands are sometimes discovered by chance or by application of new techniques for the elucidation of molecular structure, including x-ray crystallographic analysis and recombinant genetic techniques for proteins.

peptide is a sequence of amino acids. When the twenty naturally occurring amino acids are condensed into polymeric molecules they form a wide variety of three-dimensional configurations, each resulting from a particular amino acid sequence and solvent condition. The number of possible pentapeptides of the 20 naturally occurring amino acids, for example, is 20^5 or 3.2 million different peptides. The likelihood that molecules of this size might be useful in receptor-binding studies is supported by epitope analysis studies showing that some antibodies recognize sequences as short as a few amino acids with high specificity. Furthermore, the average molecular weight of amino acids puts small peptides in the size range of many currently useful pharmaceutical products. Of course, larger peptides may be necessary for many purposes; and polypeptides having changes in only a small number of residues may also be useful for such purposes ^{as} the analysis of structure-activity relationships.

Pharmaceutical drug discovery is one type of research which relies on such a study of structure-activity relationships. In most cases contemporary pharmaceutical research can be described as the process of discovering novel ligands with desirable patterns of specificity for biologically important receptors. Another example is research to discover new compounds for use in agriculture, such as pesticides and herbicides.

Prior methods of preparing large numbers of different oligomers have been painstakingly slow when used at a scale sufficient to permit effective rational or random screening. For example, the "Merrifield" method (J. Am. Chem. Soc. (1963) 85:2149-2154, which is incorporated herein by reference) has been used to synthesize peptides on a solid support. In the Merrifield method, an amino acid is covalently bonded to a support made of an insoluble polymer. Another amino acid with an alpha protected group is reacted with the covalently bonded amino acid to form a dipeptide. After washing, the protective group is removed and a third amino acid with an alpha

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