

United States Patent [19]**Houghten et al.**[11] **Patent Number:** **5,504,190**[45] **Date of Patent:** **Apr. 2, 1996**[54] **EQUIMOLAR MULTIPLE OLIGOMER MIXTURES, ESPECIALLY OLIGOPEPTIDE MIXTURES**[75] Inventors: **Richard A. Houghten**, Solana Beach; **Julio H. Cuervo**, La Jolla; **Clemencia Pinilla**; **Jon R. Appel, Jr.**, both of Cardiff; **Silvie Blondelle**, La Jolla, all of Calif.[73] Assignee: **Torrey Pines Institute for Molecular Studies**, San Diego, Calif.[21] Appl. No.: **253,854**[22] Filed: **Jun. 3, 1994****Related U.S. Application Data**

[60] Division of Ser. No. 797,551, Nov. 19, 1991, abandoned, which is a continuation-in-part of Ser. No. 701,658, May 16, 1991, abandoned, which is a continuation-in-part of Ser. No. 617,023, Nov. 21, 1990, abandoned.

[51] **Int. Cl.**⁶ **A61K 38/04**; C07K 5/00; C07K 7/00; C07K 16/00[52] **U.S. Cl.** **530/329**; 530/328; 530/327; 530/326; 530/325; 530/324[58] **Field of Search** 530/329, 328, 530/327, 326, 325, 324; 514/17, 16, 15, 14, 13, 12[56] **References Cited****U.S. PATENT DOCUMENTS**

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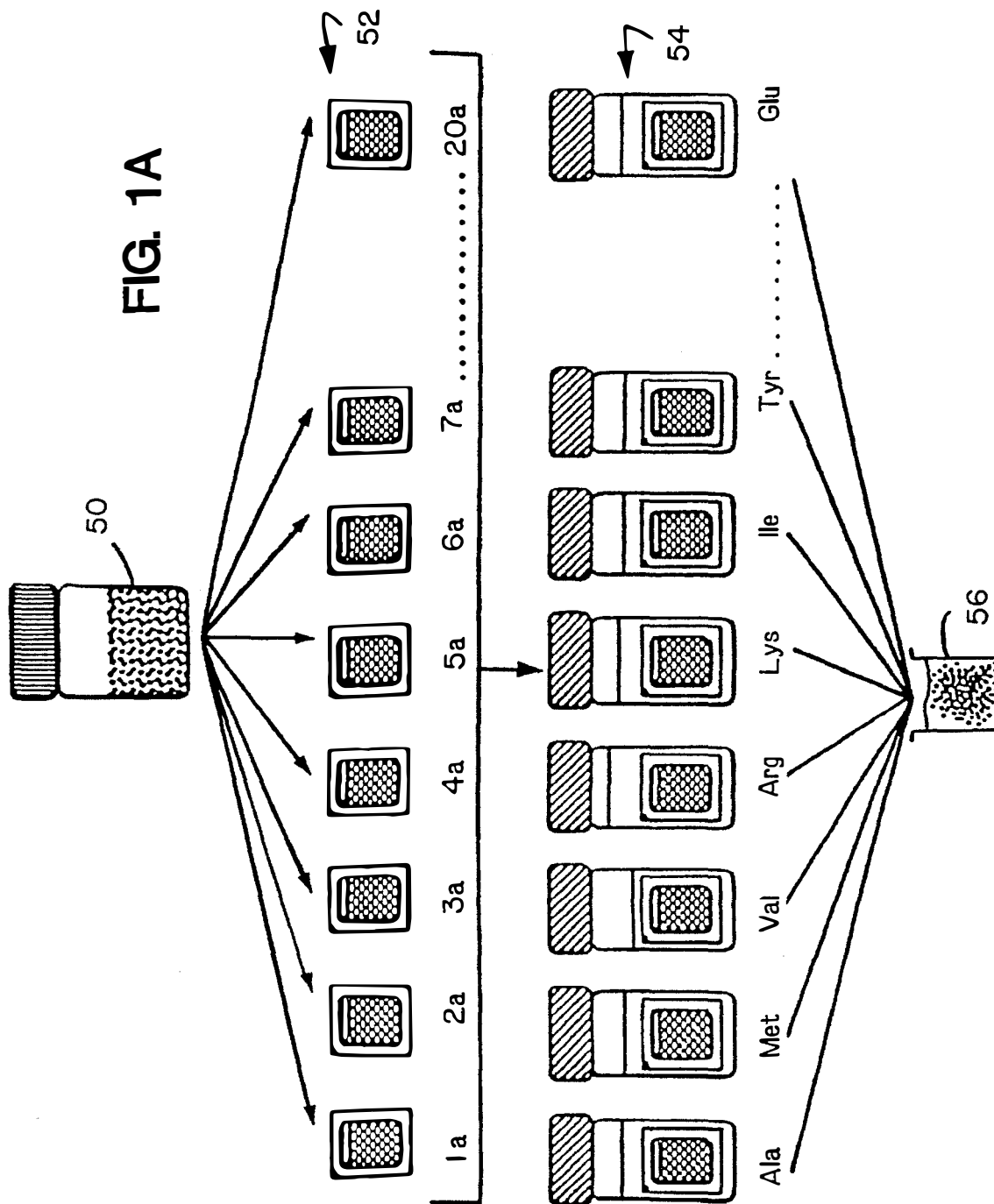
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A process for the synthesis of a complex mixture pool of solid support-coupled monomeric repeating unit compounds such as amino acid derivatives is disclosed in which the mixture pool contains an equimolar representation of reacted monomeric repeating unit compounds coupled. Also disclosed is a process for the stepwise synthesis of a complex mixture of coupled or free, unsupported oligomers such as oligopeptides. A set of self-solubilizing, unsupported mixed oligopeptides having one or more predetermined amino acid residues at one or more of the same, predetermined positions in the oligopeptide chain in which the set contains equimolar amounts of a plurality of different amino acid residues, preferably at least six different residues, at one or more of the same predetermined positions of the oligopeptide chain is also disclosed, as are methods of making and using the same.

5 Claims, 11 Drawing Sheets



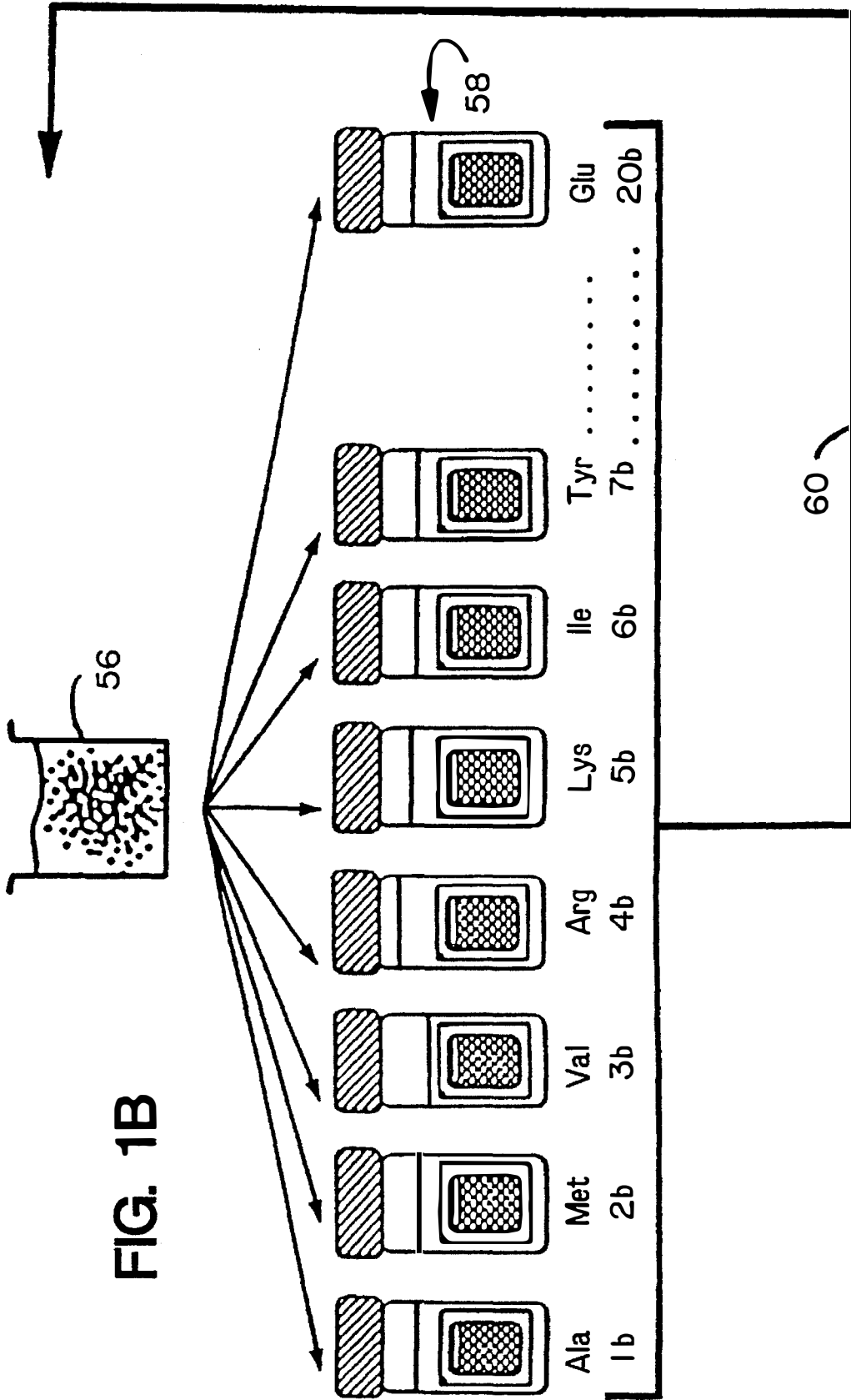


FIG. 1B

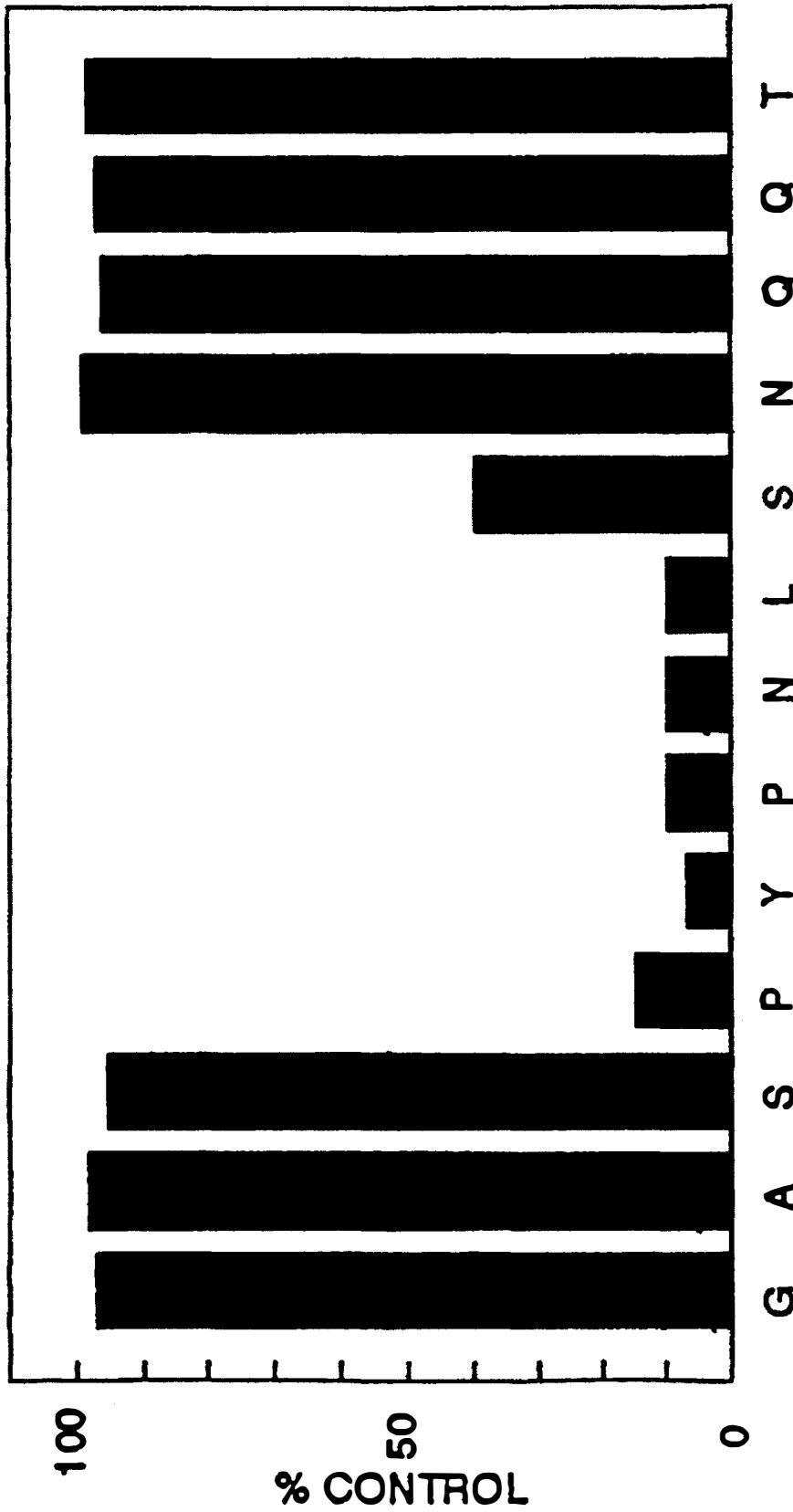


FIG. 2

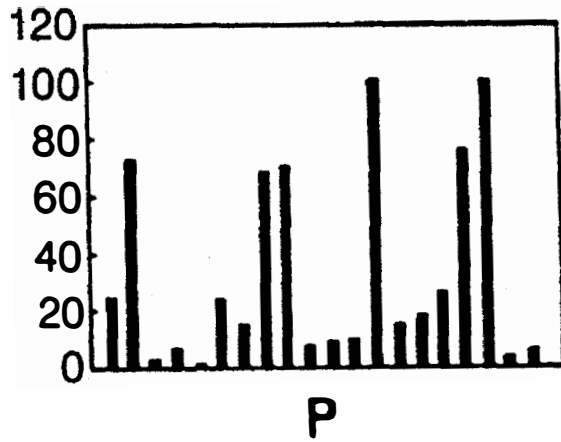


FIG. 3A

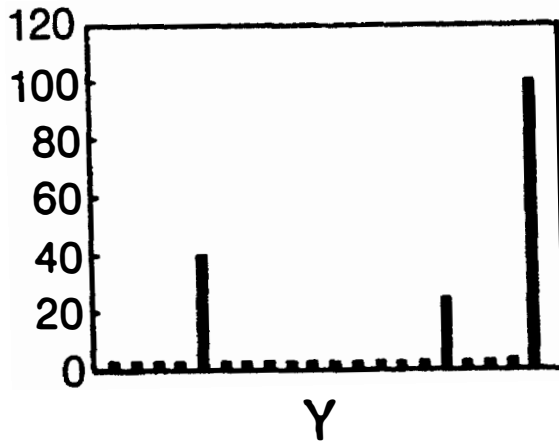


FIG. 3B

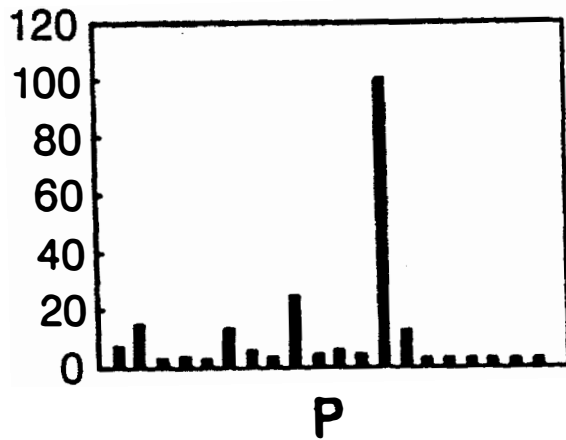


FIG. 3C

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