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Banyai et al.

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(54) **DE NOVO SYNTHESIZED GENE LIBRARIES**

2219/00619 (2013.01); B01J 2219/00637 (2013.01); B01J 2219/00722 (2013.01);

(Continued)

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(58) **Field of Classification Search**

None

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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(65) **Prior Publication Data**

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(51) **Int. Cl.**

C12N 15/10 (2006.01)

B01J 19/00 (2006.01)

(Continued)

(57) **ABSTRACT**

De novo synthesized large libraries of nucleic acids are provided herein with low error rates. Further, devices for the manufacturing of high-quality building blocks, such as oligonucleotides, are described herein. Longer nucleic acids can be synthesized in parallel using microfluidic assemblies. Further, methods herein allow for the fast construction of large libraries of long, high-quality genes. Devices for the manufacturing of large libraries of long and high-quality nucleic acids are further described herein.

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

CPC **B01J 19/0046** (2013.01); **C12N 15/1093** (2013.01); **C12N 15/66** (2013.01); **B01J 2219/0059** (2013.01); **B01J 2219/00313** (2013.01); **B01J 2219/00317** (2013.01); **B01J 2219/00378** (2013.01); **B01J 2219/00587** (2013.01); **B01J 2219/00596** (2013.01); **B01J**

25 Claims, 82 Drawing Sheets

(3 of 82 Drawing Sheet(s) Filed in Color)

Gene Printing and NanoReactor Technology

