

(12) United States Patent Almeida et al.

US 10,745,753 B2 (10) Patent No.:

(45) Date of Patent: Aug. 18, 2020

(54) MOUSE CELL LINE AUTHENTICATION

(71) Applicant: United States of America, as

represented by the Secretary of

Commerce, Gaithersburg, MD (US)

Inventors: Jamie Almeida, Eldersburg, MD (US);

Kenneth Cole, Gaithersburg, MD (US)

Assignee: Government of the United States of

America, as Represented by the Secretary of Commerce, Gaithersburg,

MD (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 442 days.

(21) Appl. No.: 15/383,378

(22)Filed: Dec. 19, 2016

(65)**Prior Publication Data**

> US 2017/0101677 A1 Apr. 13, 2017

Related U.S. Application Data

- (63) Continuation-in-part of application No. 13/935,285, filed on Jul. 3, 2013, now Pat. No. 9,556,482.
- (51) **Int. Cl.** C12Q 1/68 (2018.01)C12Q 1/6881 (2018.01)
- (52) U.S. Cl.

CPC C12Q 1/6881 (2013.01); C12Q 2600/156 (2013.01); C12Q 2600/16 (2013.01)

Field of Classification Search

See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

2013/0184176 A1 7/2013 Schumm

FOREIGN PATENT DOCUMENTS

WO WO/2016/066070 5/2016 WO/2016/188144 WO 12/2016

OTHER PUBLICATIONS

Almeida et al. (BMC Biotechnology, 2011, vol. 11, p. 1-10, IDS

reference) (Year: 2011).*

Please see the attached listings on document 1: PRior Art for Information Disclosure Statement Submitted With Application-33 References) and document 2: (Prior art references from Cytotechnology paper).

* cited by examiner

Primary Examiner - Stephanie K Mummert (74) Attorney, Agent, or Firm — Daphne Burton; Burton IP Law Group

ABSTRACT (57)

A method, kit and primers for determining alleles present in a DNA sample that is sourced from either a mouse or a cell line derived from a mouse. A set of STR marker loci are selected that can be amplified together in a multiplex amplification reaction. The set of STR marker loci are selected from the group consisting of: 18-3, 4-2, 6-7, 15-3, 6-4, 12-1, 5-5, X-1, Mo11-1, Mo19-2, Mo1-2, Mo7-1, Mo1-1, Mo3-2, Mo8-1, Mo2-1, Mo11-2, Mo17-2, Mo13-1, D8S1106 and D4S2408. A set of oligonucleotide primer pairs are provided. Each oligonucleotide primer pair flanks a single locus in the set of STR marker loci, which are co-amplified in a multiplex amplification reaction, with the product(s) comprising a mixture of amplified alleles from each of the co-amplified loci in the set of STR marker loci. The products are evaluated to determine the alleles present at each of the loci analyzed.

> 33 Claims, 19 Drawing Sheets Specification includes a Sequence Listing.