

5/6/97



20271 Goldenrod Lane - Germantown, Maryland 20876

Telephone: (301) 428-4980 (800) USA-LABS

Administration Fax: (301) 428-4877

Laboratory Fax: (301) 428-7946

REPORT OF LABORATORY EXAMINATION

July 25, 1997

Ms. Mary Kate McGilvray
Chemist III
Massachusetts State Police Crime Laboratory
59 Horse Pond Road
Sudbury, MA 01776

Re: Cellmark Case No. F967430
Your Case No. C95-704 Somerville

EXHIBITS:

Items of evidence were received for analysis for the above-referenced case. Polymerase chain reaction (PCR) testing was performed on the items listed below by receipt date:

September 6, 1996

Table with 2 columns: ID#, Description. Row 1: 21 Thread labelled "...metal piece on third stair..."

June 26, 1997

Fingernails labelled "...clippings right hand..."
Fingernails labelled "...clippings left hand..."

RESULTS:

DNA was isolated from the right hand fingernail clippings and from the left hand fingernail clippings. DNA from these items and DNA previously extracted from the thread labelled metal piece on third stair was amplified using the PCR and typed for the short tandem repeat (STR) loci HUMCSF1PO, HUMTPOX and HUMTH01 and for gender (X,Y) using the GenePrint™ STR Multiplex System and the GenePrint™ Sex Determination System (Amelogenin), respectively. The types detected for these samples and the types reported for the blood swatch labelled Janet Downing and the blood swatch labelled Edward

Report for F961430

July 25, 1997

Page Two

O'Brien in the Report of Laboratory Examination dated November 27, 1996, are listed below:

TYPES DETECTED

<u>Sample</u>	<u>CSE1PO</u>	<u>TPOX</u>	<u>THO1</u>	<u>X.Y</u>
third stair	11,12	8,9,11,12	8,9.3*	XY
right hand nails	11,12	8,9,11*	8,9.3*	XY
left hand nails	11,12*	8,9,11*	8,9.3*	XY
Janet Downing	11,12	8,11	8,9.3	X
Edward O'Brien	11,12	8,9	6,9.3	XY

In addition to the types listed, faint results were obtained. These results may be due to the presence of DNA from more than one individual or to technical artifacts.

The results listed in bold print are darker than the other results observed at that locus.

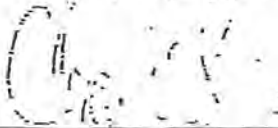
CONCLUSIONS:

The data indicate that DNA from more than one individual was obtained from the thread labelled metal piece on third stair, from the right hand fingernail clippings and from the left hand fingernail clippings. The primary source of the DNA obtained from the thread labelled metal piece on third stair, from the right hand fingernail clippings and from the left hand fingernail clippings is female; a secondary source is male. Janet Downing cannot be excluded as the primary source of the DNA obtained from the thread labelled metal piece on third stair, from the right hand fingernail clippings and from the left hand fingernail clippings. Edward O'Brien is excluded as the primary source of the DNA obtained from the thread labelled metal piece on third stair, from the right hand fingernail clippings and from the left hand fingernail clippings. No further conclusion can be made regarding the secondary source of the DNA obtained from the thread labelled metal piece third stair.

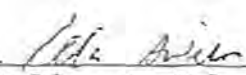
Report for F961430
July 25, 1997
Page Three

Using Recommendation 4.1 from the 1996 National Research Council² report, the approximate frequencies in the Caucasian, African American and Hispanic populations of the CSF1PO, TPOX and TH01 types obtained from the thread labelled metal piece on third stair and the blood swatch labelled Janet Downing are as follows:

<u>Population data base</u>	<u>Frequency</u>
Caucasian	1 in 320
African American	1 in 1,500
Hispanic	1 in 460



Charlotte J. Word, Ph.D.
Deputy Laboratory Director



Melisa A. Weber
Senior Molecular Biologist

¹ This test is performed pursuant to licensing arrangements with Roche Molecular Systems, Inc. and the Perkin Elmer Corporation.

² The National Research Council on DNA Forensic Science (1996) The Evaluation of Forensic DNA Evidence. National Academy Press, Washington, D.C. (see p. 122, using $\theta=0.03$)