

Blue Mountain Crime Laboratory

Biology / DNA Department

Biology/DNA Forensic Casework Report

Submitting Agency:
Blue Mountain County Sheriff's Office

Report Date: January 15, 2024
Agency Case #: FA-19-074
Lab Case #: L1990-01234

Victim: Jessica Black
Suspect: Unknown
Crime Type: Homicide

List of evidence received for possible DNA analysis:

Agency Item #	Lab Item #	Description
BMSO-004	4	Tan cargo-style shorts, brand "Patagonia", size 28, recovered from Jessica Black
	4.1	Cutting of wet/dry swabs collected from button of shorts
	4.2	Cutting of front waistband of shorts
BMSO-008	8	Black underpants, brand "Hanes", size medium, recovered from Jessica Black
	8.1	Cutting of front panel of underpants
BMSO-009	9	36-inch piece of brown twine with reddish-brown stains in center
	9.1	Cutting from the reddish-brown stains of the twine
	9.2	Cutting from the ends of the twine
BMSO-010	10	Oral Swabs (2) collected from Jessica Black at autopsy
	10.1	Cutting of oral swabs
BMSO-011	11	Anal Swabs (2) collected from Jessica Black at autopsy
	11.1	Cutting of anal swabs
BMSO-012	12	Vaginal Swabs (2) collected from Jessica Black at autopsy
	12.1	Cutting of vaginal swabs
BMSO-013	13	Left hand fingernail clippings collected from Jessica Black at autopsy
	13.1	Cutting of wet/dry swabs collected from left hand fingernail clippings
BMSO-014	14	Right hand fingernail clippings collected from Jessica Black at autopsy
	14.1	Cutting of wet/dry swabs collected from right hand fingernail clippings
BMSO-016	16	Blood Card (DNA Reference for Jessica Black, DOB: 03/21/1960)
	16.1	Cutting of blood card standard from Jessica Black

Other evidence received but not processed for DNA is listed in case file.
The evidence was processed for DNA typing using the Globalfiler® Amplification Kit.

Results and Conclusions

Evidence	Results
Item 4.1: Cutting of wet/dry swabs collected from button of shorts	A mixture of at least two individuals, including at least one unknown male, was detected, but the sample was not suitable for comparison purposes.
Item 4.2: Cutting of front waistband of shorts	No DNA profiles generated.
Item 8.1: Cutting of front panel of underpants	No DNA profiles generated.
Item 9.1: Cutting from the reddish-brown stains of the twine	<p>A single source DNA profile was generated from Item 9.1 and is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the biological material found on Item 9.1. Assuming a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the DNA profile obtained from Item 9.1 is listed below for the following populations:</p> <ul style="list-style-type: none"> 1 in 837 trillion in US Caucasians 1 in 900 trillion in US African Americans 1 in 900 trillion in US Southwest Hispanics
Item 9.2: Cutting from the ends of the twine	A single source DNA profile of an unknown male was generated and is suitable for comparison.
Item 10.1: Cutting of oral swabs	<p>A single source DNA profile was generated from Item 10.1 and is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the biological material found on Item 10.1. Assuming a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the DNA profile obtained from Item 10.1 is listed below for the following populations:</p> <ul style="list-style-type: none"> 1 in 837 trillion in US Caucasians 1 in 900 trillion in US African Americans 1 in 900 trillion in US Southwest Hispanics
Item 11.1: Cutting of anal swabs	<p>A single source DNA profile was generated from Item 11.1 and is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the biological material found on Item 11.1. Assuming a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the DNA profile obtained from Item 11.1 is listed below for the following populations:</p> <ul style="list-style-type: none"> 1 in 837 trillion in US Caucasians 1 in 900 trillion in US African Americans 1 in 900 trillion in US Southwest Hispanics

Item 12.1: Cutting of vaginal swabs

A single source DNA profile was generated from Item 12.1 and is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the biological material found on Item 12.1. Assuming a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the DNA profile obtained from Item 12.1 is listed below for the following populations:

1 in 837 trillion in US Caucasians

1 in 900 trillion in US African Americans

1 in 900 trillion in US Southwest Hispanics

Item 13.1: Cutting of wet/dry swabs collected from left hand fingernail clippings

A DNA profile consisting of a mixture of at least two individuals was obtained from a cutting of Item 13.1. At least one of the contributors is a male.

The female component of this mixture is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the female component of the biological material found on Item 13.1. Assuming the female component is a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the female component of the DNA profile obtained from the cutting of Item 13.1 is listed below for the following populations:

1 in 837 trillion in US Caucasians

1 in 900 trillion in US African Americans

1 in 900 trillion in US Southwest Hispanics

The male contributor of this mixture is an unknown, unrelated male individual. The male contributor profile is suitable for comparison.

Item 14.1: Cutting of wet/dry swabs collected from right hand fingernail clippings

A DNA profile consisting of a mixture of at least two individuals was obtained from a cutting of Item 14.1. At least one of the contributors is a male.

The major component of this mixture is consistent with the known profile of Jessica Black (Item 16.1). Therefore, Jessica Black cannot be excluded as the source of the major component of the biological material found on Item 14.1. Assuming the major component is a single contributor, the probability of randomly selecting an unknown, unrelated individual with a DNA profile consistent with the major component of the DNA profile obtained from Item 14.1 is listed below for the following populations:

1 in 837 trillion in US Caucasians

1 in 900 trillion in US African Americans

1 in 900 trillion in US Southwest Hispanics

The minor contributor of this mixture is an unknown, unrelated male individual. The minor contributor profile is suitable for comparison.

Item 16.1: Cutting of Blood Card A single-source female DNA profile was generated and suitable for
standard from Jessica Black use as a known standard (Jessica Black, DOB: 03/21/1960).

Report submitted by,

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