A full DNA profile may be obtained from a single swab of a face mask worn only 2 hours via rapid, then conventional, development methods.

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INTRO

Masks commonly worn to protect from germs may contain enough DNA to confirm an individual's identity. This study shows that masks worn from 2-16 hours may produce a DNA profile when developed via rapid DNA, conventional methods, or both, from a single sample swab. This creates a new, potentially useful investigative option when these everyday items are left behind after a crime.

METHODS

This study was designed to determine if a standard cotton swab, used to sample a worn face mask, gathers a sufficient DNA quantity to produce a full profile using conventional DNA analysis methods after rapid DNA processing.

The masks were worn for durations of 16, 8, 4, and 2 hours.

Three separate swabs/cuttings were collected from each individual mask. The first swab was analyzed using conventional DNA methods. The second swab was cut and analyzed conventionally. The third swab was processed on the Applied Biosystems™RapidHIT™ID System, removed, then analyzed conventionally.

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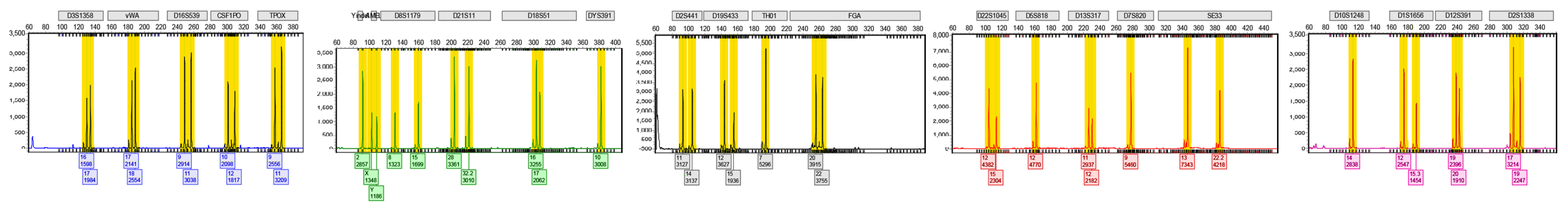
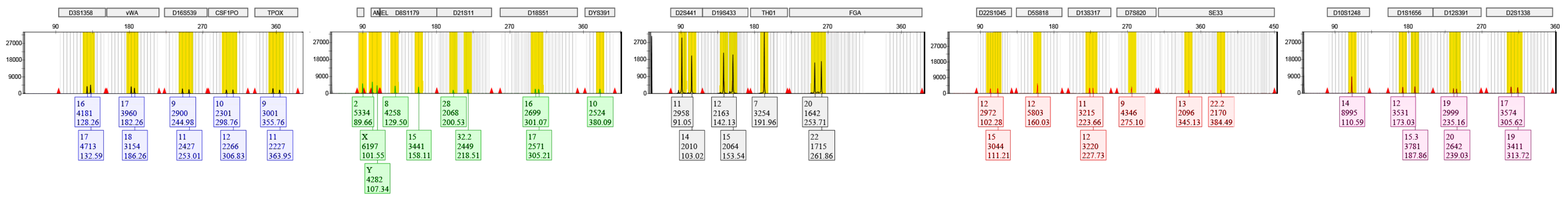
Created by ArashDesign
from Noun Project

Face masks fight germs AND crime.

RapidHIT ID Profile



Conventional Development Profile



Results from mask worn 2 hours, processed first on the Applied Biosystems™RapidHIT™ID System, then via conventional methods

RESULTS

- In all cases, full profiles were developed by both the Applied Biosystems™RapidHIT™ID System and conventional DNA methods.
- Concordant results were produced between duplicate samples from the rapid and conventional DNA methods.
- Full DNA profiles were retrieved from the masks even after the first two samples were collected.

SAMPLE BREAKDOWN

Sample	Sample QTY ng/uL	Total QTY ng
16 Hours Wear Time Swab 1	1.76	70.4
16 Hours Wear Time Swab 2	0.5	20
16 Hours Wear Time Swab 3	0.74	29.6
8 Hours Wear Time Swab 1	0.37	14.8
8 Hours Wear Time Swab 2	0.45	18
8 Hours Wear Time Swab 3	.046	18.4
4 Hours Wear Time Swab 1	1.76	70.4
4 Hours Wear Time Swab 2	0.09	3.6
4 Hours Wear Time Swab 3	0.59	23.6
2 Hours Wear Time Swab 1	0.38	15.2
2 Hours Wear Time Swab 2	0.1	4
2 Hours Wear Time Swab 3	0.36	14.4

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