

# Case Report : Mt. Muhak Hiker's Murder

- International Association of Prosecutors 2017

**Hyung Jin Hwi**

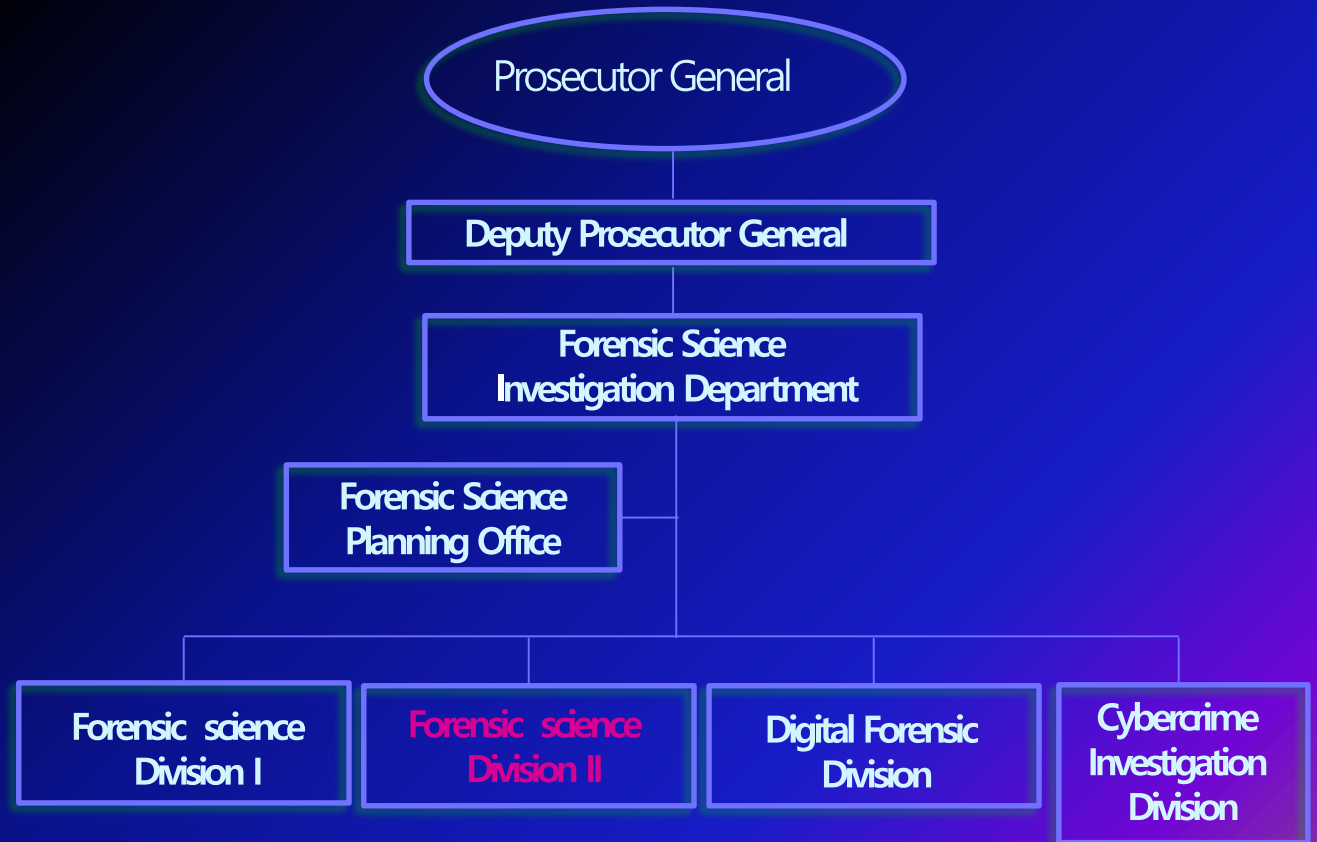
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# Organization



## National Digital Forensic Center

- Date of construction : Oct. 2008.
- Site : 39,094m<sup>2</sup>
- Building : 6 floors, first basement floor



# Forensic Science Division II

## Forensic Chemistry Analysis

11 Analysts, 2,104 cases analyzed (2015)

- Analysis of drug composition
- Identification of whether drugs were taken
- Drug fingerprint profiling



## Forensic DNA analysis

6 Analysts, 530 cases analyzed (2016)

- Identify Culprits of Criminal Cases
- Research on Analysis Techniques



## DNA Database Management

8 Analysts, 18,784 cases analyzed(2016)

- DNA Database Registration and Maintenance
- Search on DNA Database



# DNA Database of South Korea



## Increase of Violent Crimes

2003. 5.–2004. 7. 20 victims killed  
(serial murder: women and old people)



# DNA Database of South Korea

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**DNA law** : Since July 26<sup>th</sup>, 2010.

**“ACT ON USE AND PROTECTION OF DNA IDENTIFICATION INFORMATION”**

**Convicted offender & Suspect (Only when detained)**

## **11 Category of relevant crimes**

1. Arson, Fire
2. Homicide
3. Kidnapping, Abduction, Trafficking
4. Rape, Molestation
5. Robbery, Theft, Repeated Burglary
6. Violence (Only Serious)
7. Aggravated Punishment of specific crimes
8. Rape, Sexual Assault
9. Narcotics
10. Protection of Children and Juveniles from Sexual Abuse
11. Military crime

# DNA Database of South Korea



Detained Suspect,  
Crime Scene Evidence



(Police, NFS)  
Evidence  
DNA database



Search



**Match !**



(SPO)  
Convicted Offender  
DNA database



Convicted offender

Send a match result to the police  
( SMS message, within 30min.)

# Case background

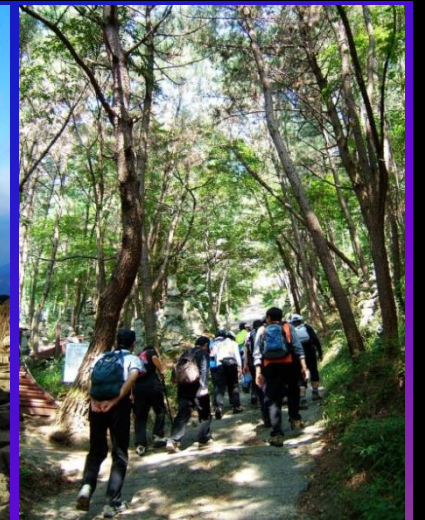
**Oct 28, 2015. A 51-year-old woman who went mountaineering disappeared.**

**Next day that female victim was found dead in Mt. Muhak with severe head wounds and signs of strangulation.**



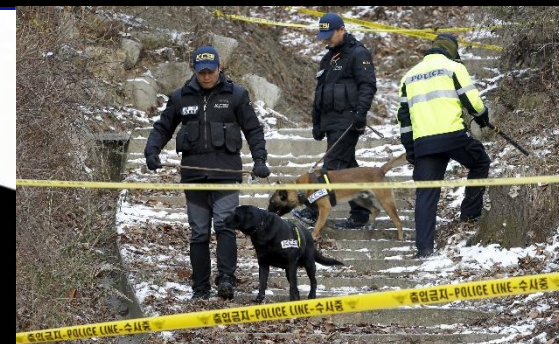
that the murder had happened at **Mt. Muhak** greatly shocked local residents and hikers.

No one thought that **the famous mountain park** could become a crime scene.



# Case background

The local police set up **the investigation Team** and organized a massive manhunt to apprehend **the suspect**.



The police requested **National Forensic Service** to perform DNA analysis with the victim's possessions **twice**.



But **DNA profile of the suspect was not found**.

The police investigation met a difficulty in finding clues about the suspect.

**No witness, no DNA.**





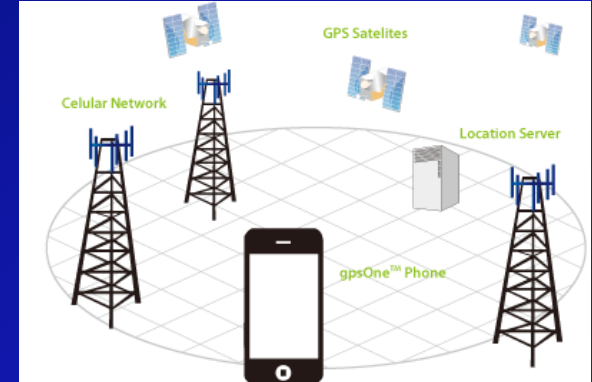
# Absence of Evidence, All Eyes Turn to DNA Analysis

When the investigation came to a halt, the police tried **a new investigation technique**. (cell tower investigation technique).

In the end, the police pointed out **Mr. A**, a herb gatherer, as **a prime suspect** because he took the same route with the victim .

The police searched Mr. A's house and called him in **7 times** to investigate his whereabouts.

Since he made an incoherent statements and it was found that he also had a history of violence, the police were convinced **"It's him"**



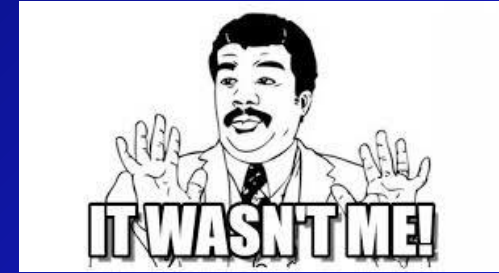
# Absence of Evidence, All Eyes Turn to DNA Analysis

**Mr. A** refused the police request to be interviewed repeatedly .

The police reported it to **prosecutor** that **Mr. A** must be a perpetrator, and filed a warrant for arrest.

After **prosecutor** re-examined the crime scene, Mt. Muhak, he was convinced **the perpetrator's DNA would be stained at victim's property.**

So **prosecutor** directed the police to submit victim's clothes and gloves to our DNA Lab. for 3<sup>rd</sup> DNA analysis.



# Absence of Evidence, All Eyes Turn to DNA Analysis

Victim's gloves, clothes, bags submitted to Our DNA Lab.



# Absence of Evidence, All Eyes Turn to DNA Analysis

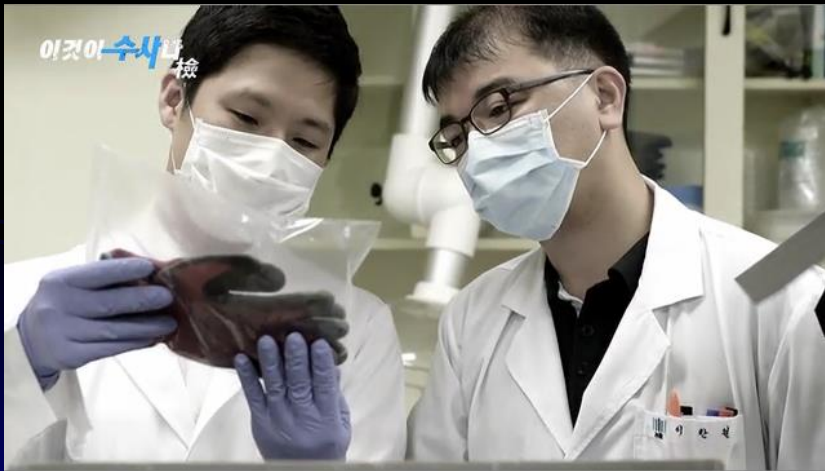
Meanwhile, convincing **Mr. A** was a real perpetrator, **the police arrested him** on April 21, 2016, without waiting the result of **3<sup>rd</sup>** DNA analysis.

Innocent Mr. A  
was arrested



# Turning Point : DNA Analysis, Closer to the Truth

Our DNA Lab put the victim's gloves on top priority for DNA analysis, assuming “perpetrator’s DNA is more likely to be left in this item than any other things during her struggling against murderer’s attack.”

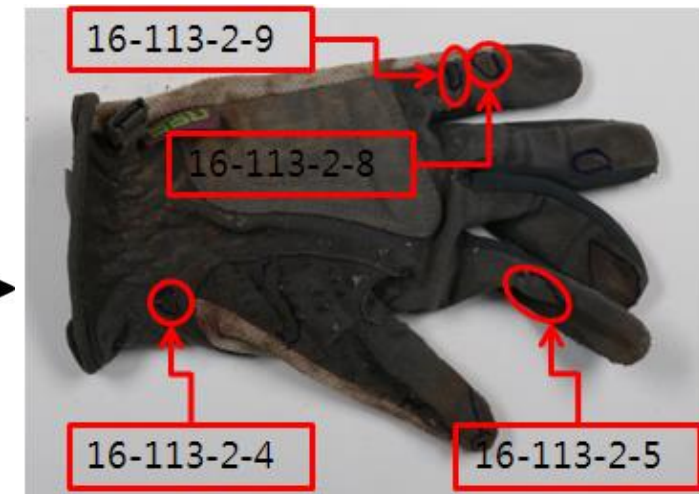


Giving the top priority

# Turning Point : DNA Analysis, Closer to the Truth

That assumption was definitely correct.

Our DNA Lab found **unknown male DNA profile** from victim's gloves **on the same day Mr. A** had been arrested by the police

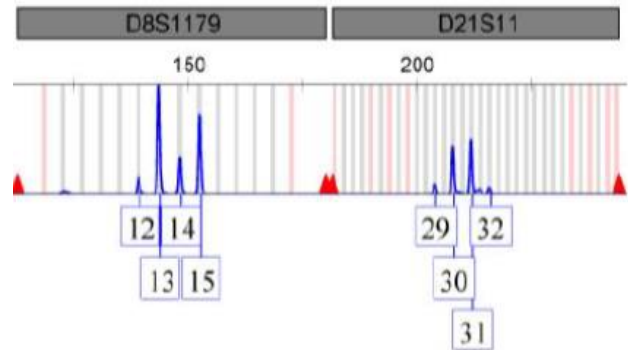


Parts Where unknown male DNA was detected

# Turning Point : DNA Analysis, Closer to the Truth

Immediately, We searched **that unknown male DNA profile** on DNA database. Fortunately, there was **'a match'**.

**That match points to the real criminal, Mr. B !**



**Unknown male  
DNA profile from Gloves**

**Search**



**Convicted Offender  
DNA database**



**Match  
Mr. B**

**Match !**

# Turning Point : DNA Analysis, Closer to the Truth

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We **noticed** the search result to the police right away.

**3 hours later,**  
**Mr. A,** the innocent, was dramatically **freed** at that night.





# DNA Provides Opportunity to Make It Right

With this DNA evidence, the real criminal, Mr. B, confessed all of his crime.  
“I went to Mt. Muhak for relaxation. However seeing the victim, I felt lustful and followed the victim to rape her, but when she resisted I murdered her.”  
**Mr. B got the life sentence in Dec. 2016.**



CCTV



Spot inspection



Spot reconstruction

# Significance of Solving the Case

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**First of all**, Koreans became well recognized about the effectiveness and power of the DNA database system.

It can **provide clues** for the investigation,  
**identify the possible suspect** and  
**protect the right of innocent people.**

**Second**, this case was a **standard example** of the sound judgement and fast and precise DNA analysis. Our DNA Lab demonstrates this!

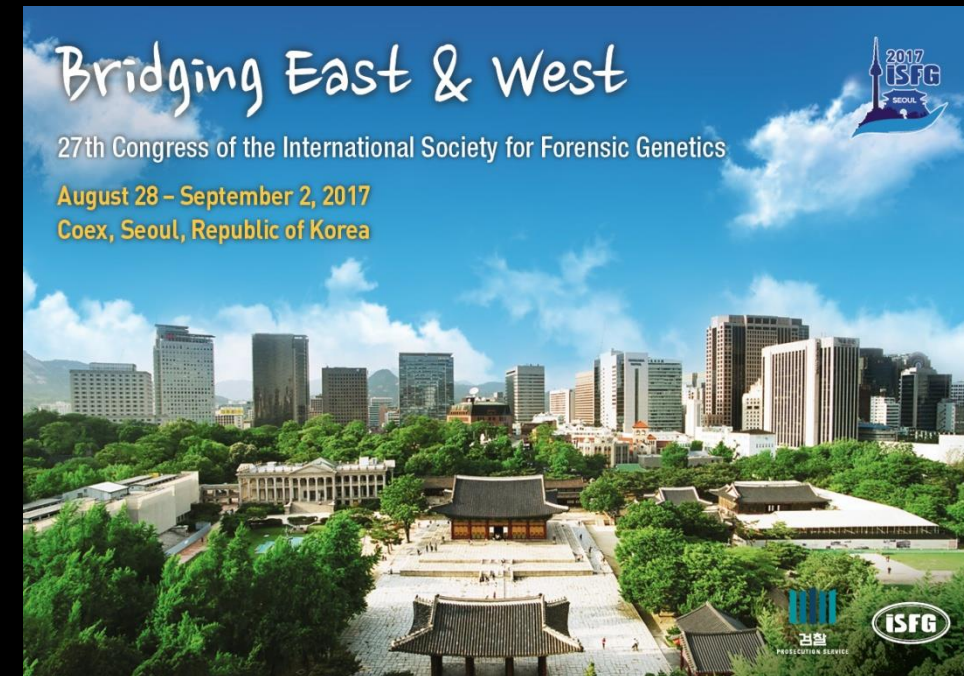
**Last**, the **prosecutor's detailed direction** to the police is really **relevant and needed** in the course of investigation.

# State of Art DNA Lab. And ISFG Seoul Congress

DNA lab. at the Supreme Prosecutors' Office(SPO) will continue to make an effort for using outstanding DNA analysis, and managing DNA database in criminal investigations and protecting human rights.

SPO will host The 2017 Congress of International Society for Forensic Genetics (ISFG) in Seoul **for the first time in Asia!!**

We hope to see you again at ISFG this August!



# Thank you for your Attention!

*Any Questions?*

