

피부암 진단 예측용 초분광 촬영 영상 분석

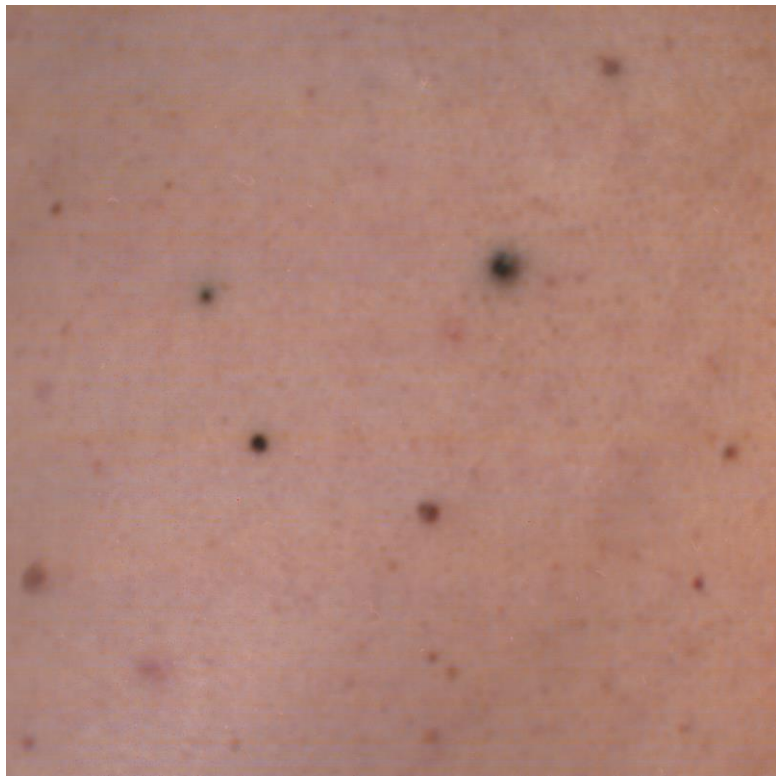
SNAPSCAN VNIR (470 ~ 900nm)

case : KUMC-016-H

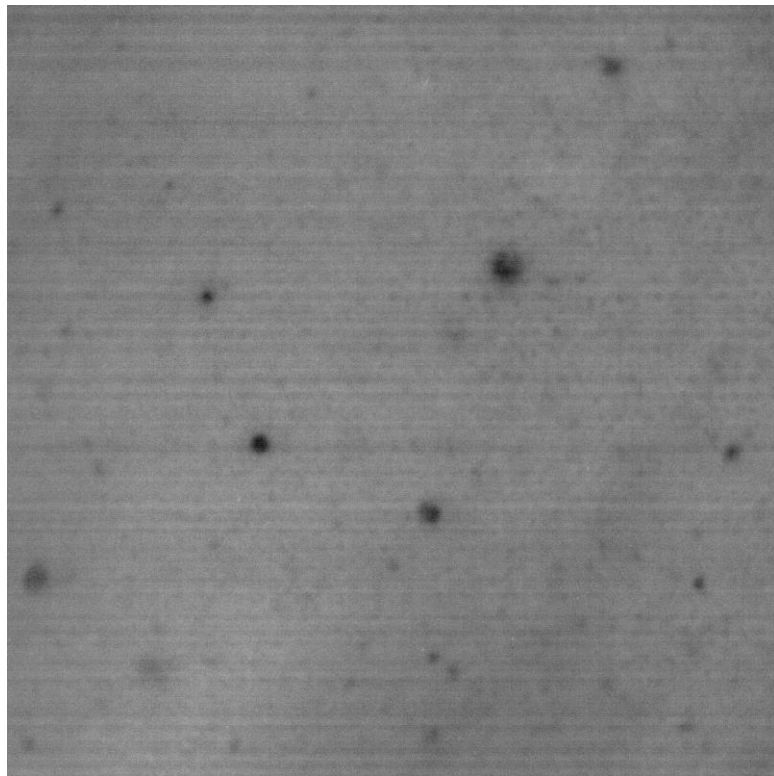
촬영 조건

- 초분광 카메라
 - 모델 : SNAPSCAN VNIR
 - 파장 범위 : 470 ~ 900nm
 - 분광 밴드 : 150개
 - 촬영 해상도
 - : 2048 x 2048 (1x binning)
 - 렌즈
 - : F2.0 / 24mm
 - : 조리개 2.8 설정
- 조명
 - FOMEX 600W 할로겐 램프 2EA
- 소프트웨어
 - 촬영 : HSI Snapscan
 - 분석 : HSI Studio, ENVI

HSI Studio – KUMC-016-H

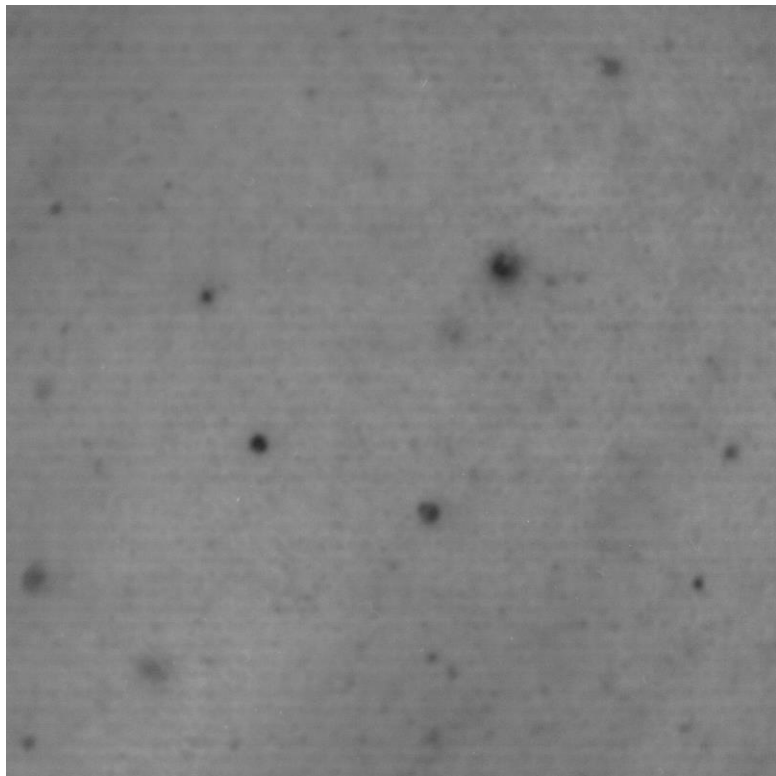


컬러 이미지

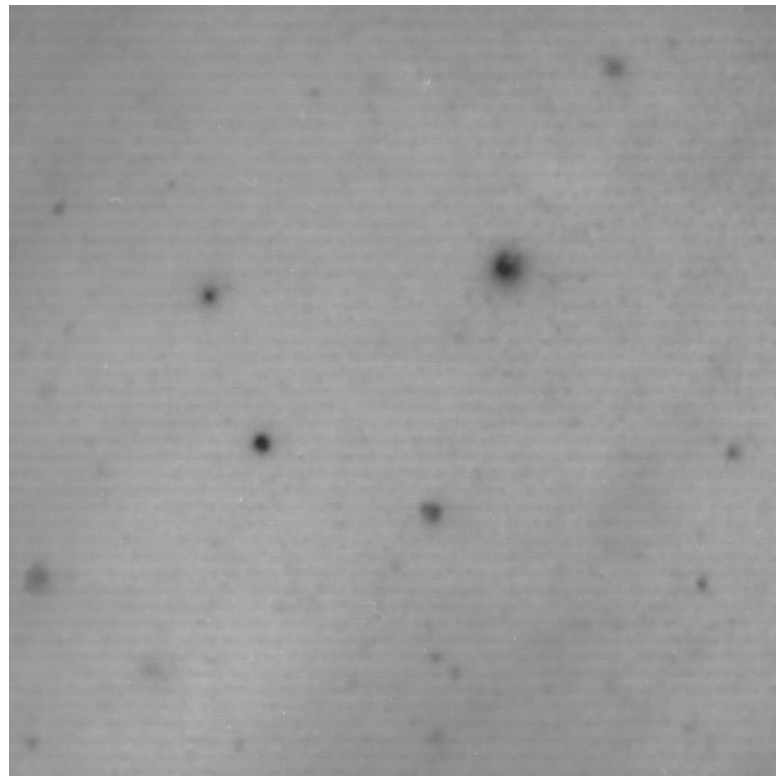


500nm

HSI Studio – KUMC-016-H

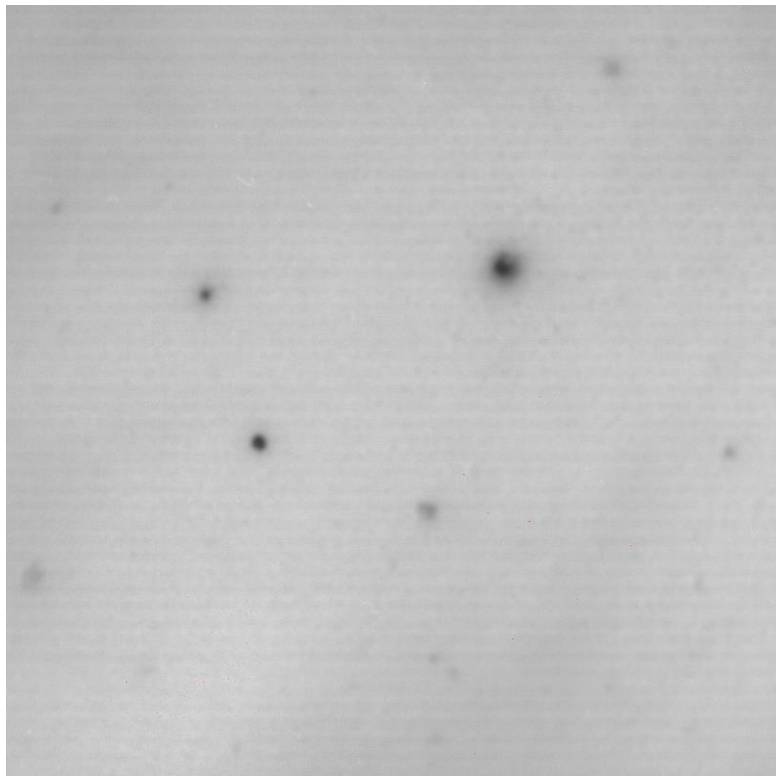


550nm

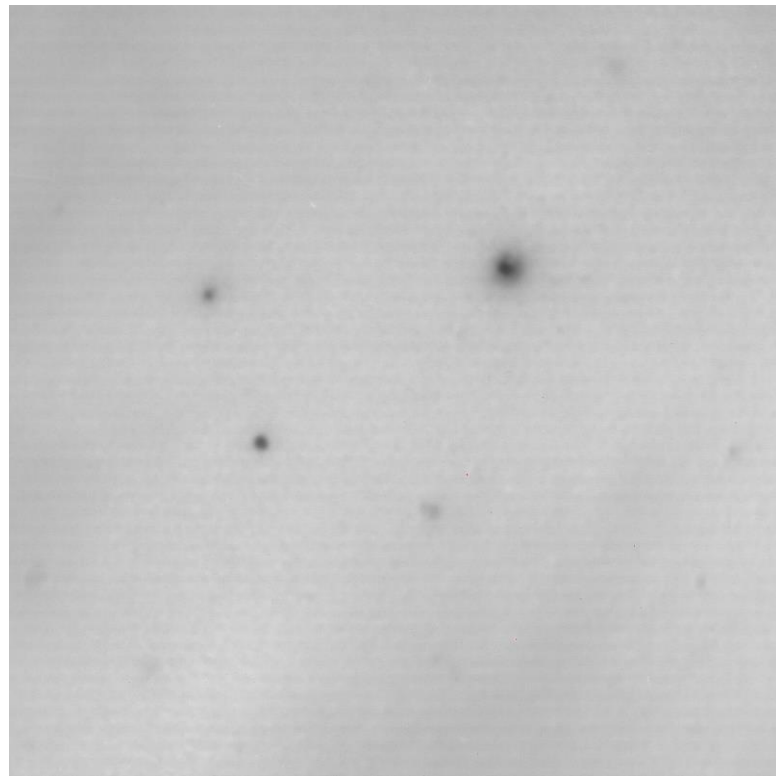


600nm

HSI Studio – KUMC-016-H

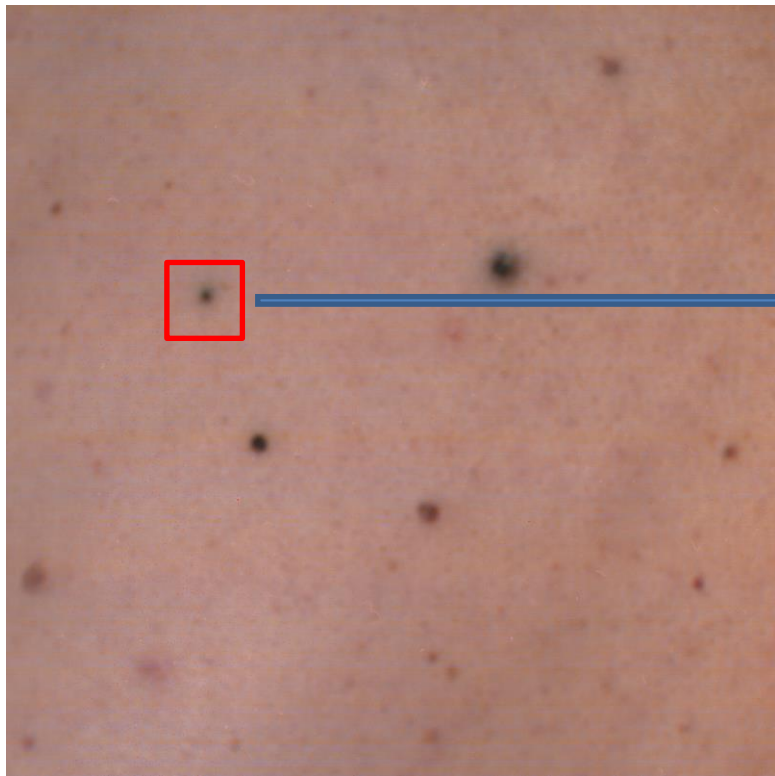


700nm

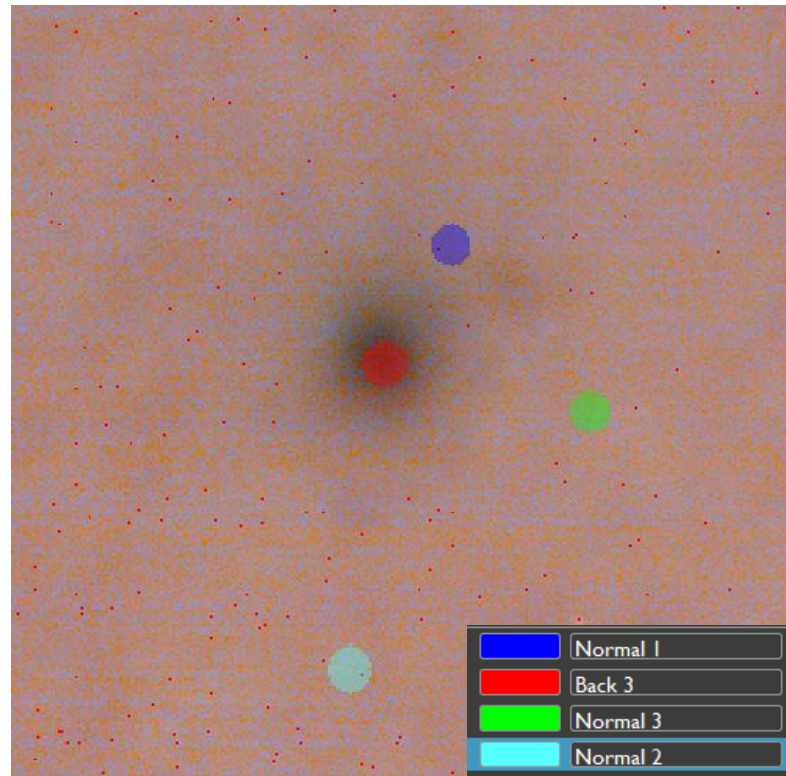


800nm

HSI Studio – KUMC-016-H

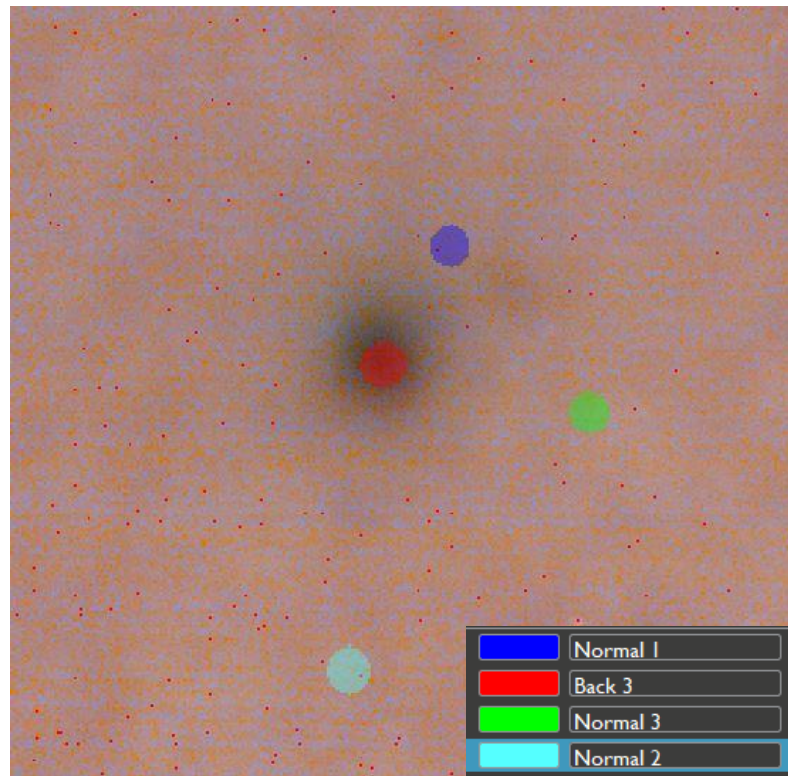


컬러 이미지

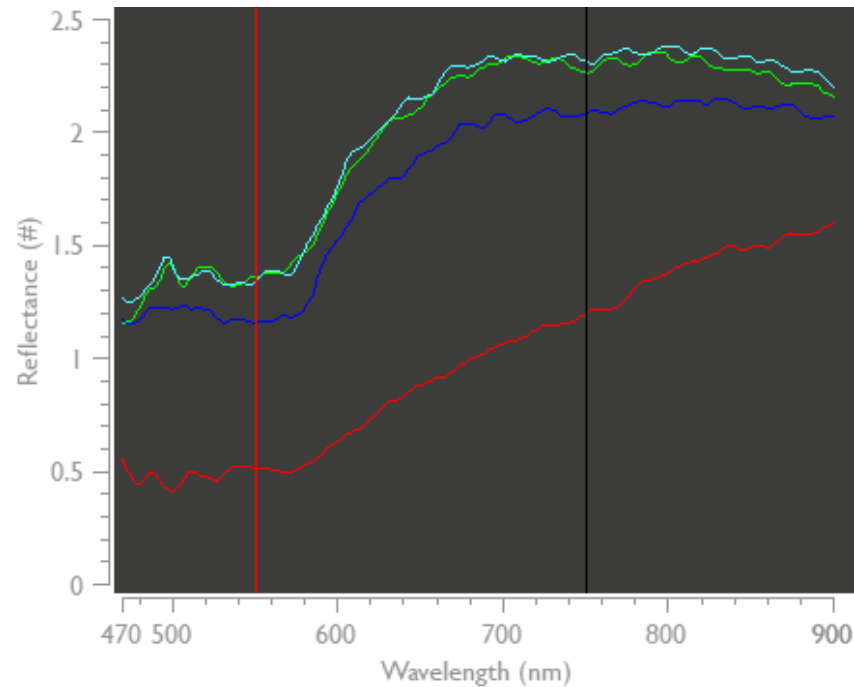


관심영역(ROI) 설정

HSI Studio – KUMC-016-H

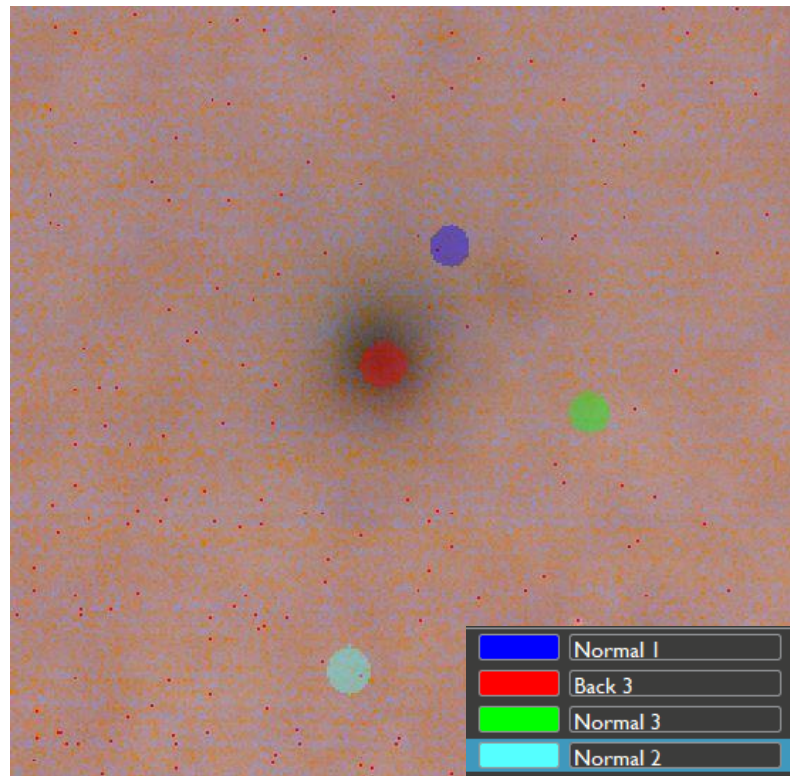


관심영역(ROI)

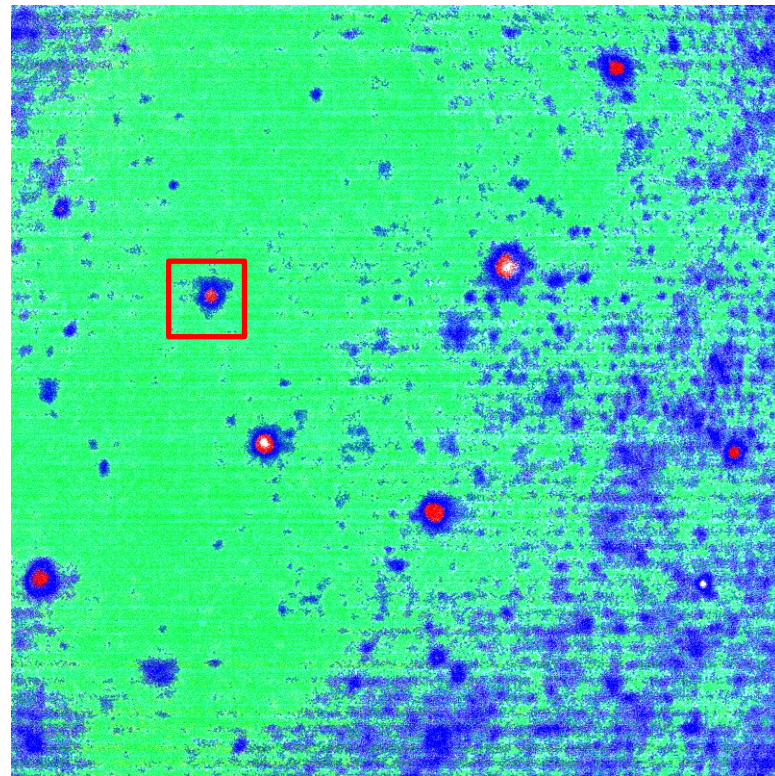


Mean spectrum

HSI Studio – KUMC-016-H

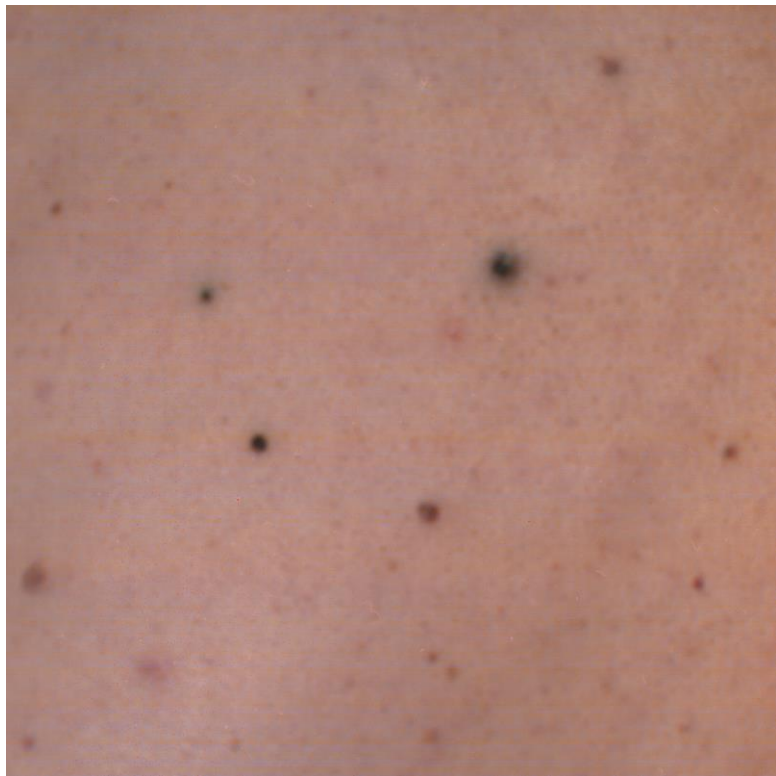


관심영역(ROI)

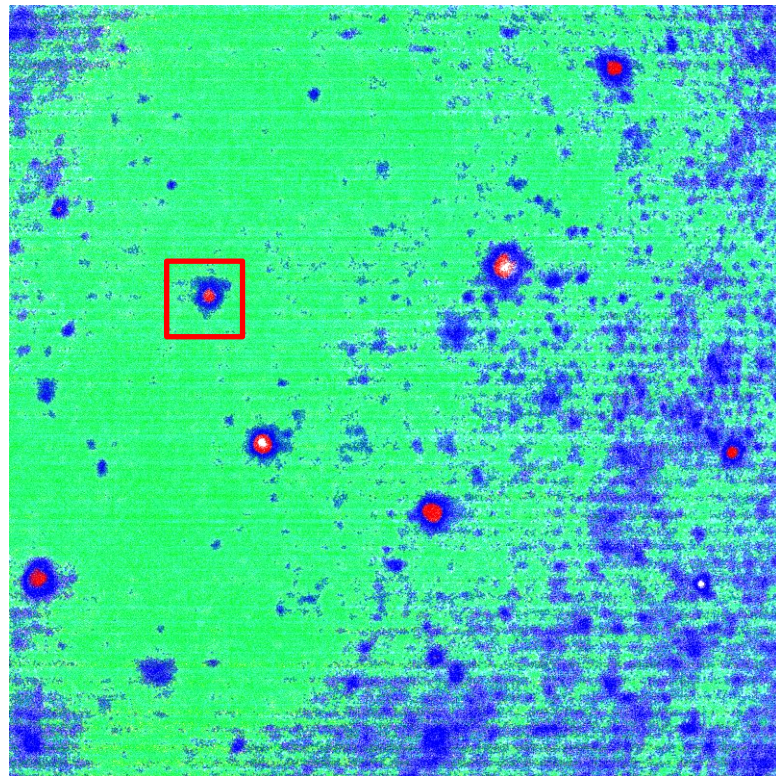


SAM Classification

HSI Studio – KUMC-016-H

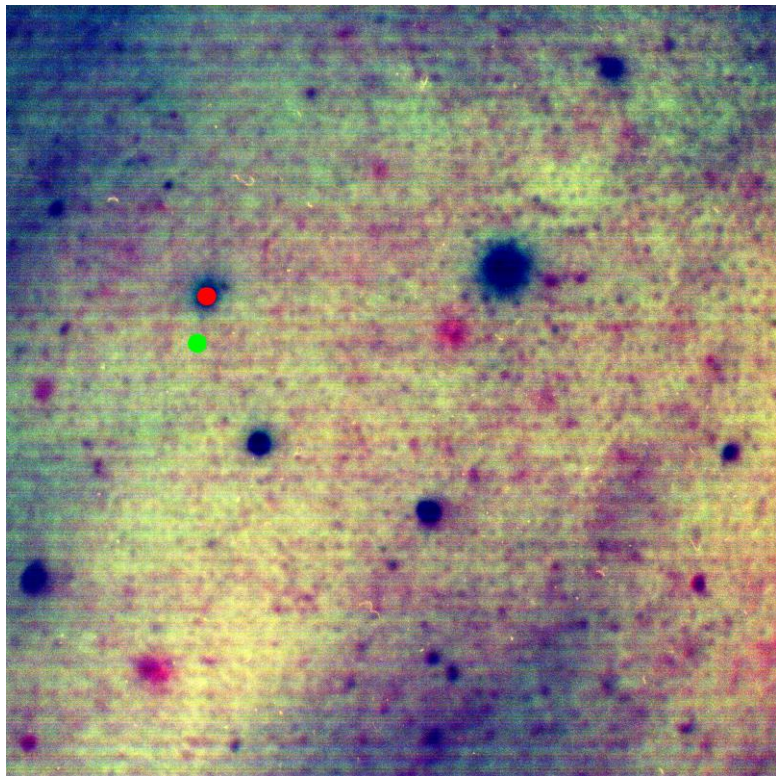


컬러 이미지

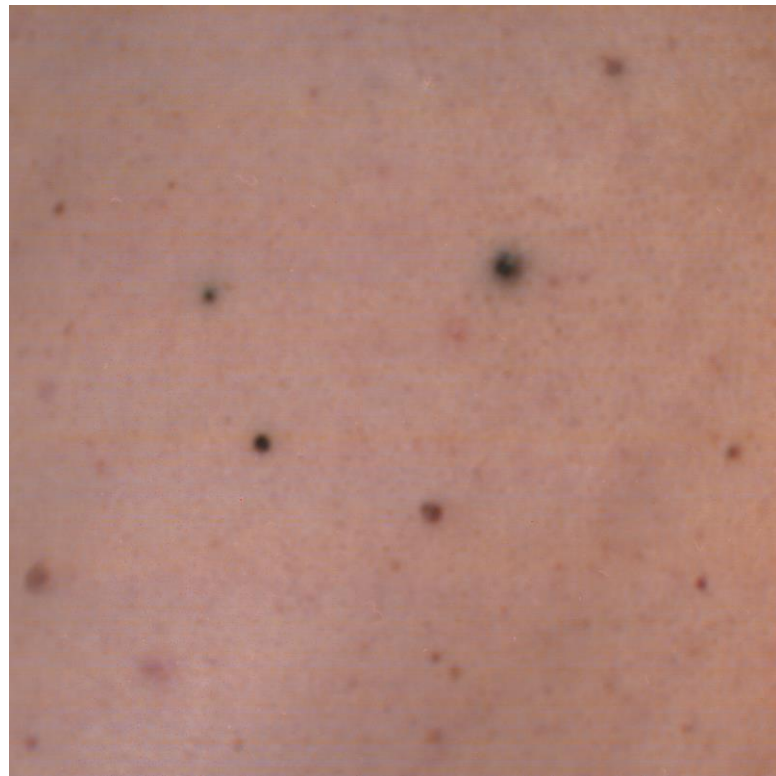


SAM Classification

ENVI – KUMC-016-H

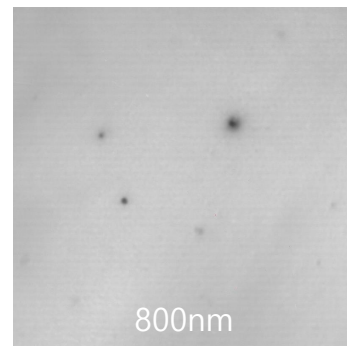
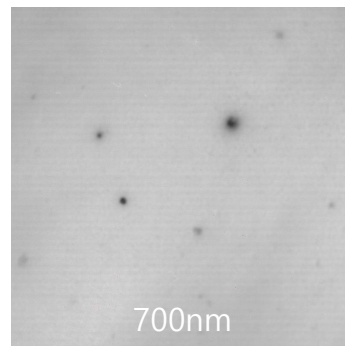
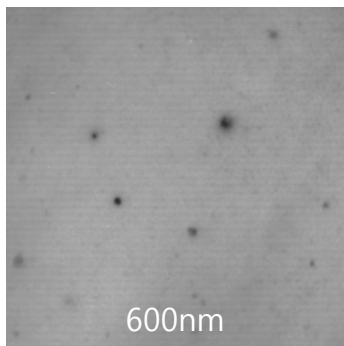
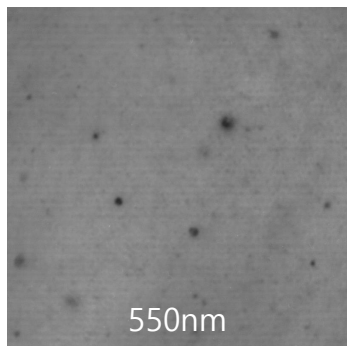
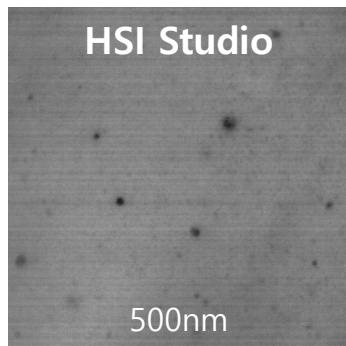
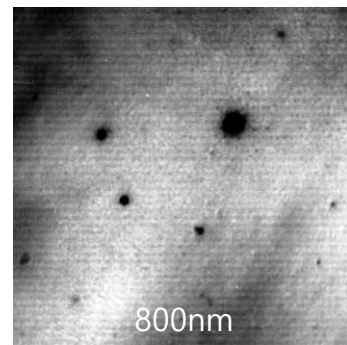
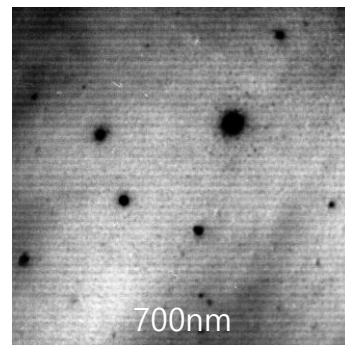
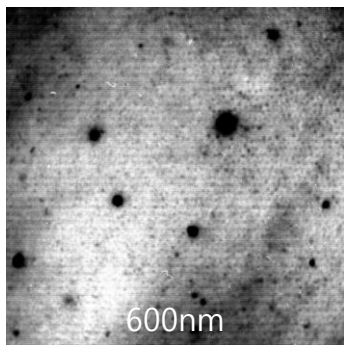
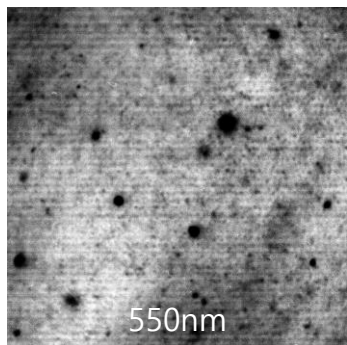
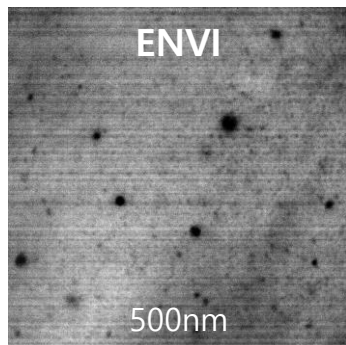


컬러 이미지_ENVI

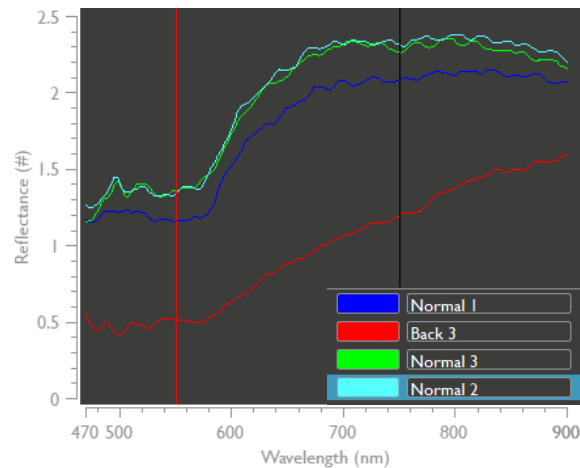
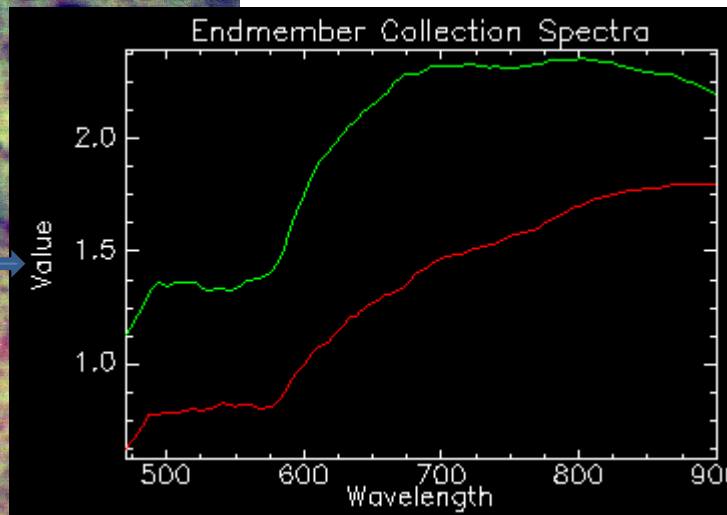
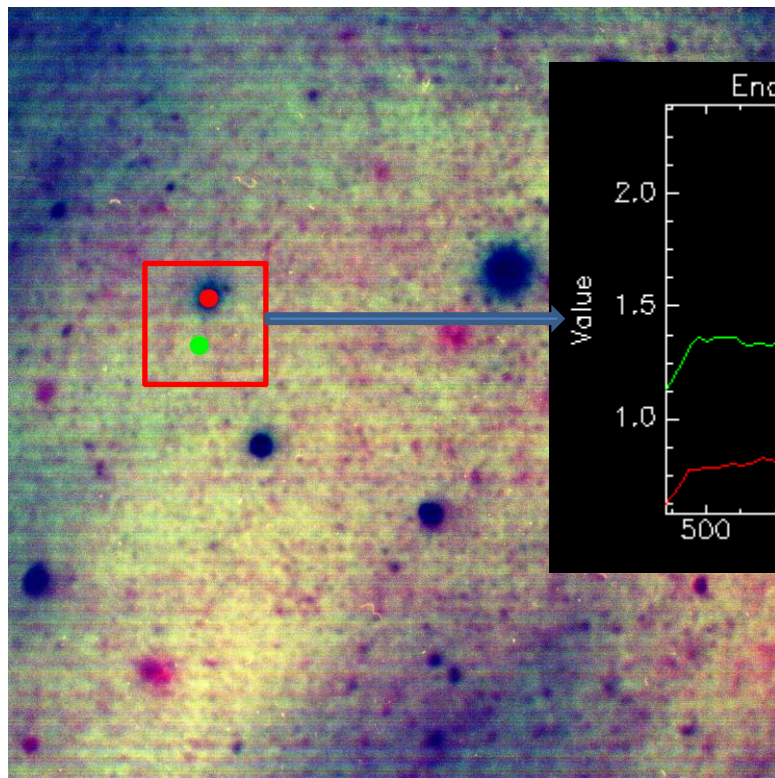


컬러 이미지_HSI Studio

ENVI – KUMC-016-H

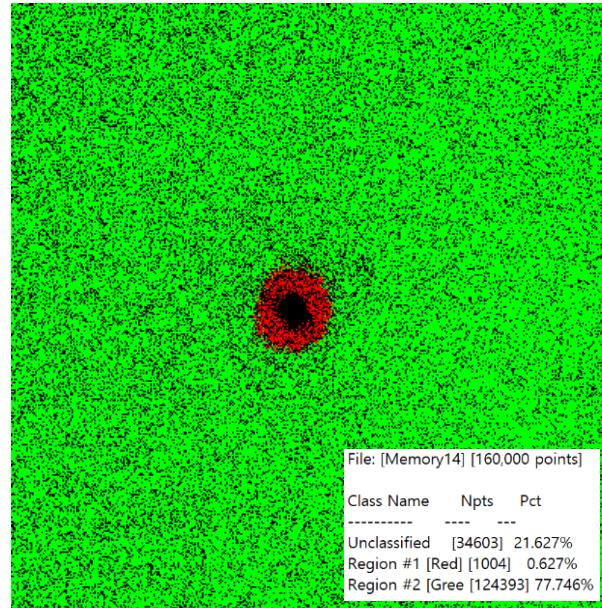
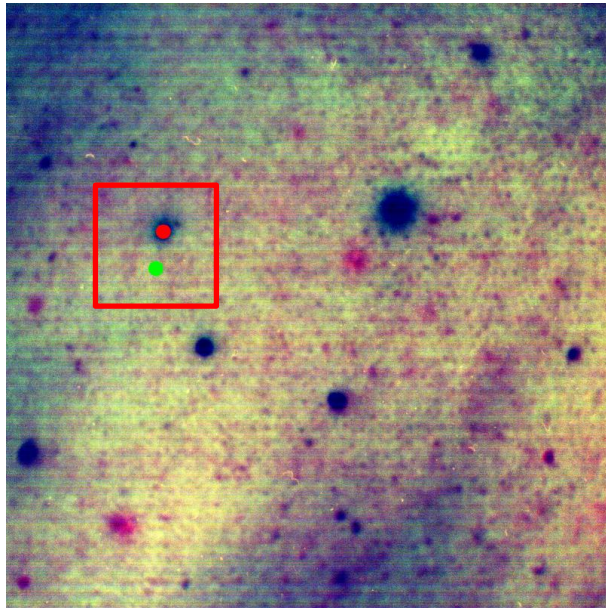


ENVI – KUMC-016-H

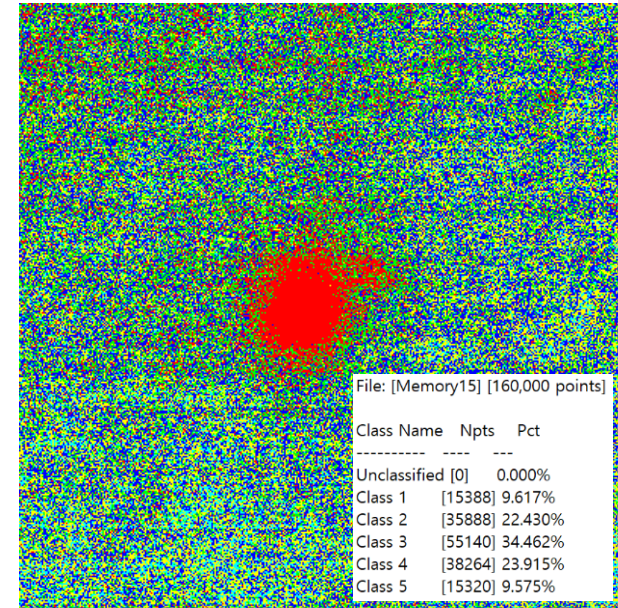


관심영역(ROI) 설정

ENVI – KUMC-016-H

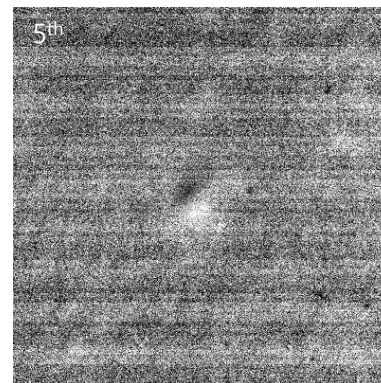
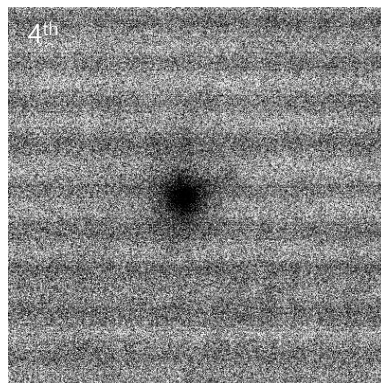
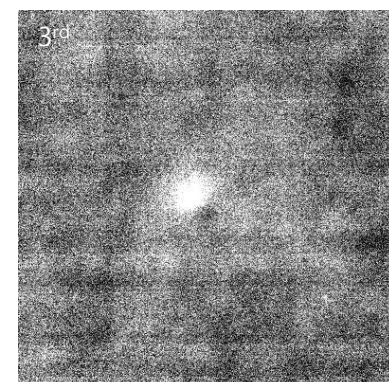
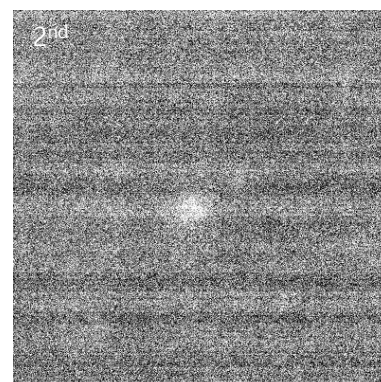
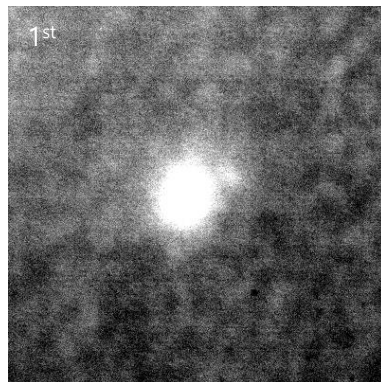
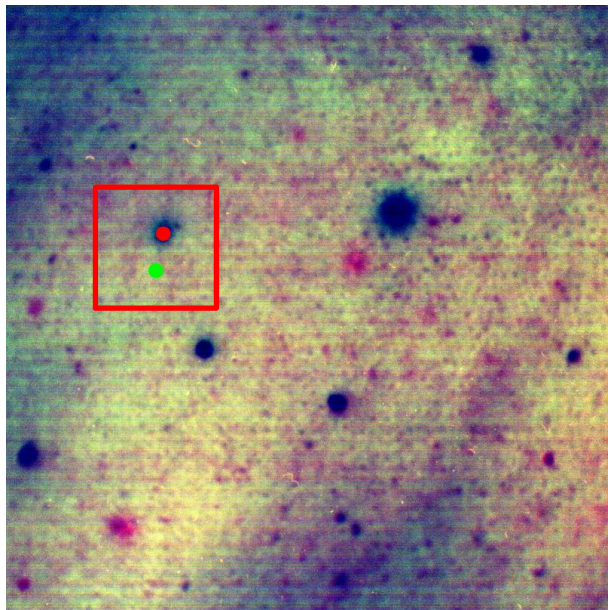


SAM Classification (400 x 400 픽셀)



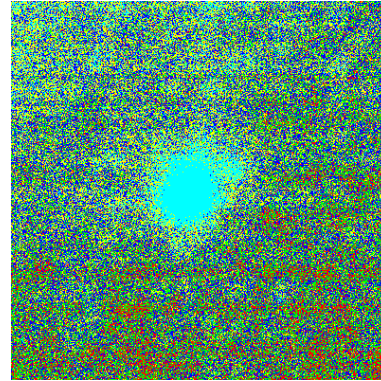
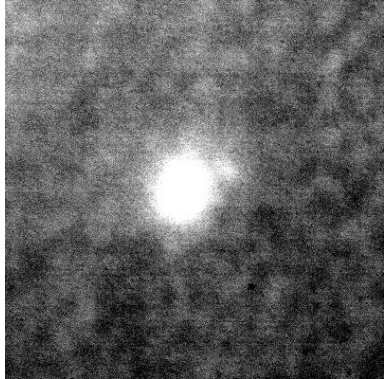
K-Means (400 x 400 픽셀)

ENVI – KUMC-016-H



Principle Component Analysis (400 x 400 픽셀)

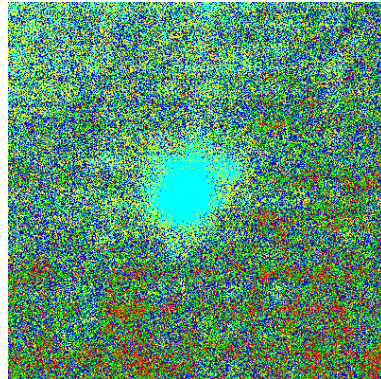
ENVI – KUMC-016-H



K-Means 5band

File: [Memory21] [160,000 points]

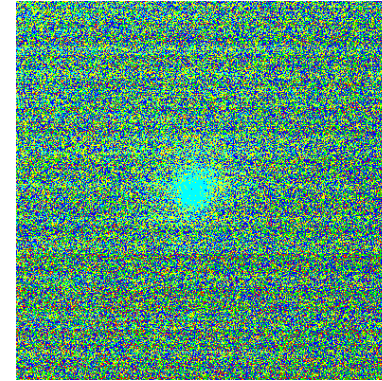
Class Name	Npts	Pct
-----	----	----
Unclassified [0]	0	0.000%
Class 1	[17877]	11.173%
Class 2	[40252]	25.157%
Class 3	[52214]	32.634%
Class 4	[33574]	20.984%
Class 5	[16083]	10.052%



ISODATA 5band

File: [Memory21] [160,000 points]

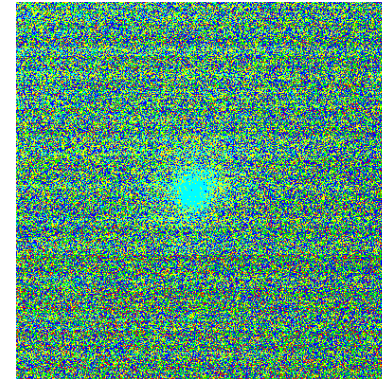
Class Name	Npts	Pct
-----	----	----
Unclassified [0]	0	0.000%
Class 1	[17877]	11.173%
Class 2	[40252]	25.157%
Class 3	[52214]	32.634%
Class 4	[33574]	20.984%
Class 5	[16083]	10.052%



K-Means 150band

File: [Memory22] [160,000 points]

Class Name	Npts	Pct
-----	----	----
Unclassified [0]	0	0.000%
Class 1	[12682]	7.926%
Class 2	[37343]	23.339%
Class 3	[55782]	34.864%
Class 4	[37453]	23.408%
Class 5	[16740]	10.463%

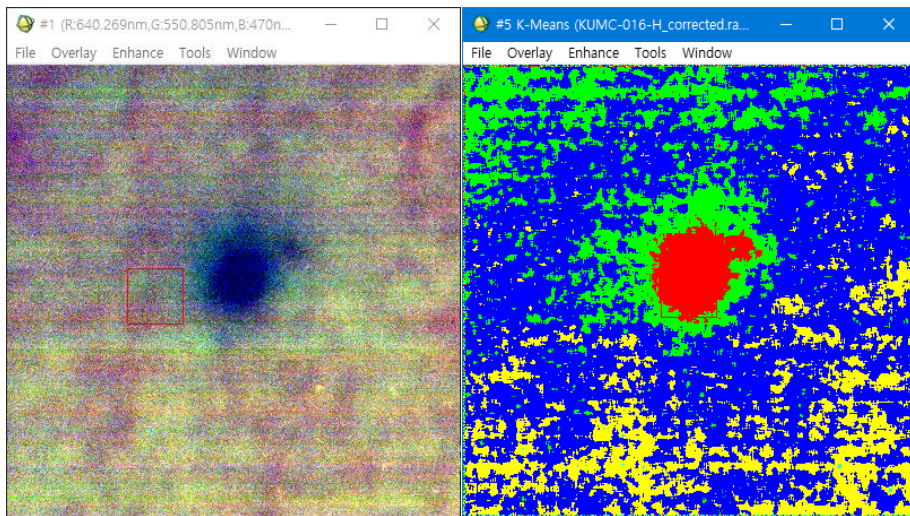


ISODATA 150band

File: [Memory22] [160,000 points]

Class Name	Npts	Pct
-----	----	----
Unclassified [0]	0	0.000%
Class 1	[12682]	7.926%
Class 2	[37343]	23.339%
Class 3	[55782]	34.864%
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Class 5	[16740]	10.463%

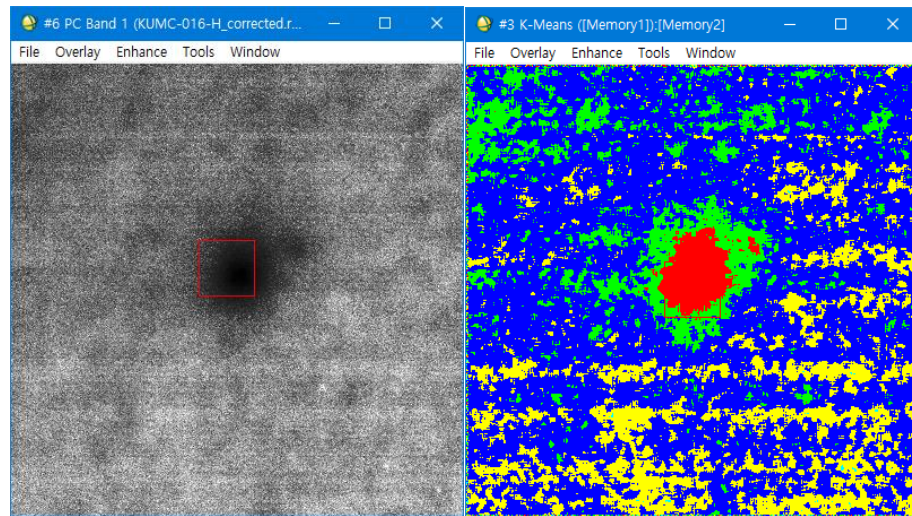
RAW & K-Means classification



RAW 400 x 400 pixel

K-Means
5x5 median filter

PCA & K-Means classification



PCA 6band
1st principle component

K-Means
5x5 median filter

THANK YOU
