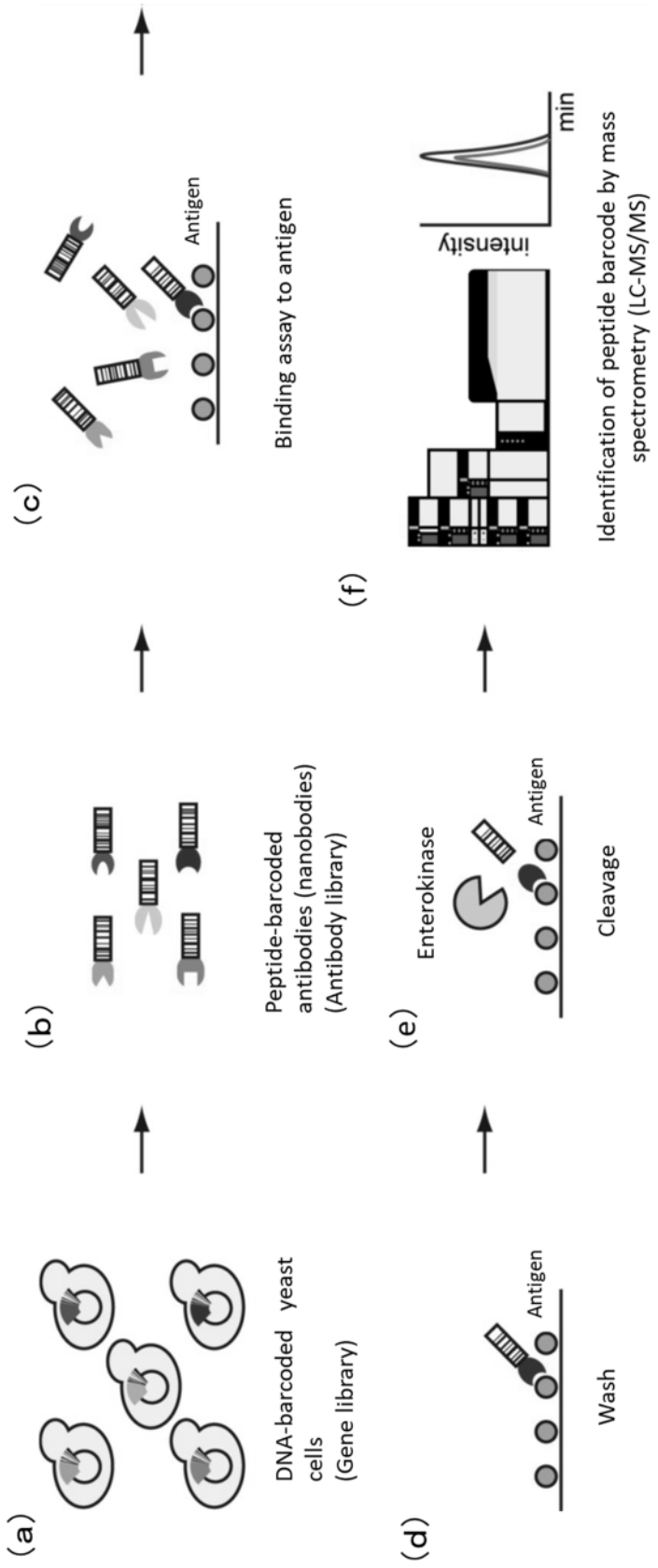
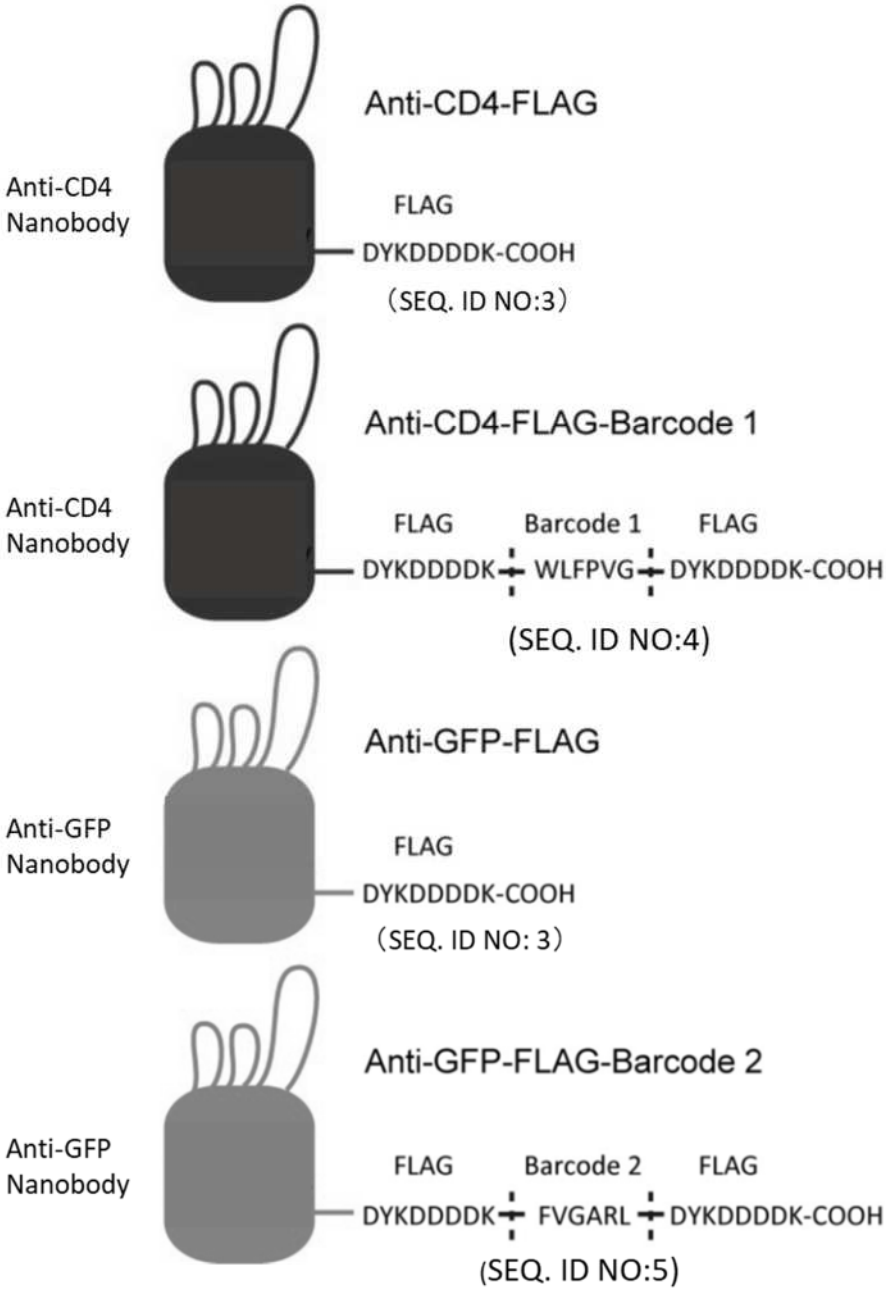
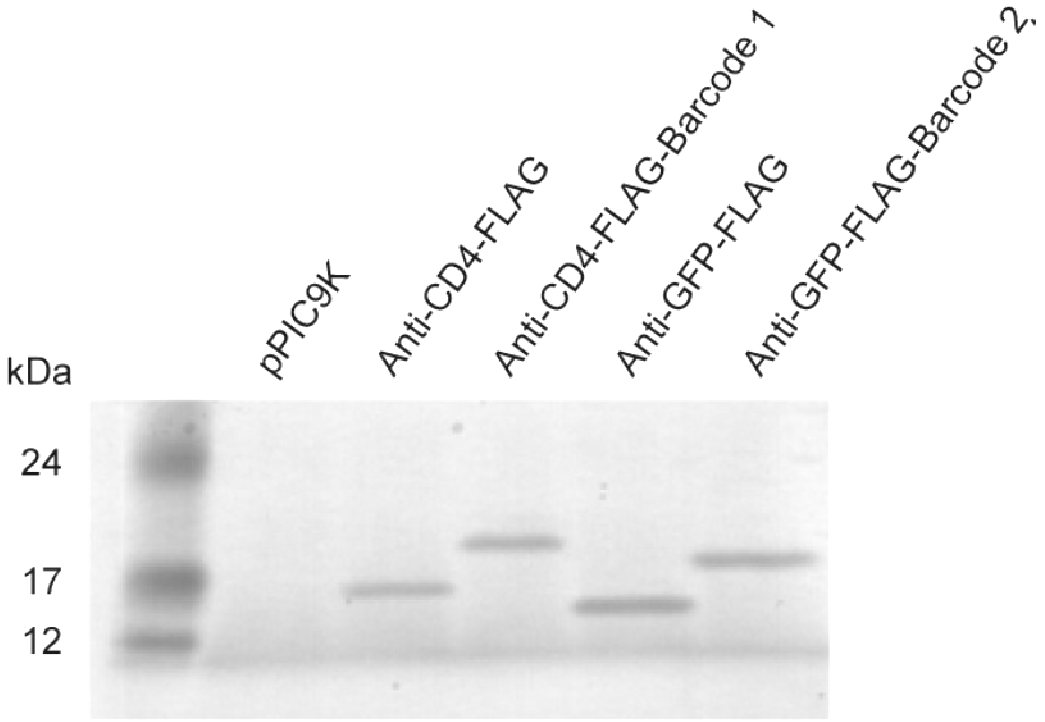
[Fig. 1]


(a)
DNA-barcoded yeast cells (Gene library)
(b)
Peptide-barcoded antibodies (nanobodies) (Antibody library)
(c)
Antigen
Binding assay to antigen
(d)
Antigen
Wash
(e)
Enterokinase
Antigen
Cleavage
(f)
intensity
min
Identification of peptide barcode by mass spectrometry (LC-MS/MS)

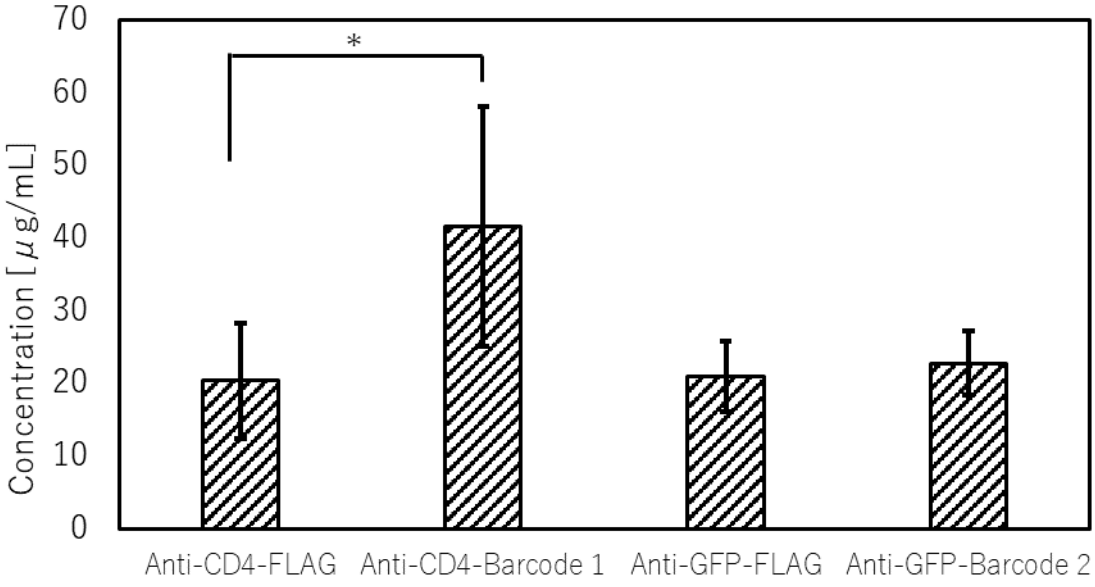
[Fig. 2]


Anti-CD4-FLAG
Anti-CD4
Nanobody
FLAG
DYKDDDDK-COOH
(SEQ. ID NO:3)
Anti-CD4-FLAG-Barcode 1
Anti-CD4
Nanobody
FLAG
Barcode 1
FLAG
DYKDDDDK
WLFPVG
DYKDDDDK-COOH
(SEQ. ID NO:4)
Anti-GFP-FLAG
Anti-GFP
Nanobody
FLAG
DYKDDDDK-COOH
(SEQ. ID NO: 3)
Anti-GFP-FLAG-Barcode 2
Anti-GFP
Nanobody
FLAG
Barcode 2
FLAG
DYKDDDDK
FVGARL
DYKDDDDK-COOH
(SEQ. ID NO:5)

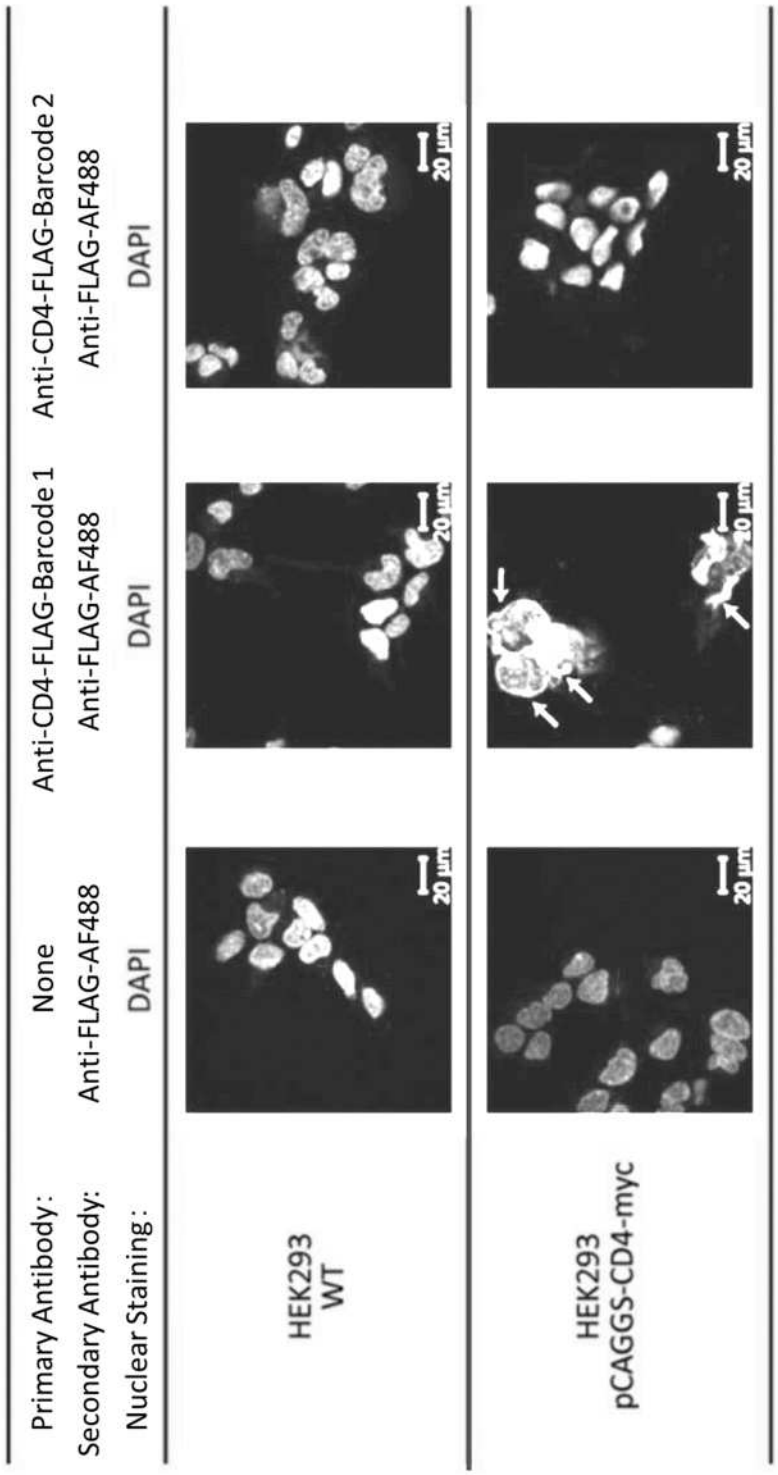
[Fig. 3]


kDa
24
17
12
pPIC9K
Anti-CD4-FLAG
Anti-CD4-FLAG-Barcode 1
Anti-GFP-FLAG
Anti-GFP-FLAG-Barcode 2.

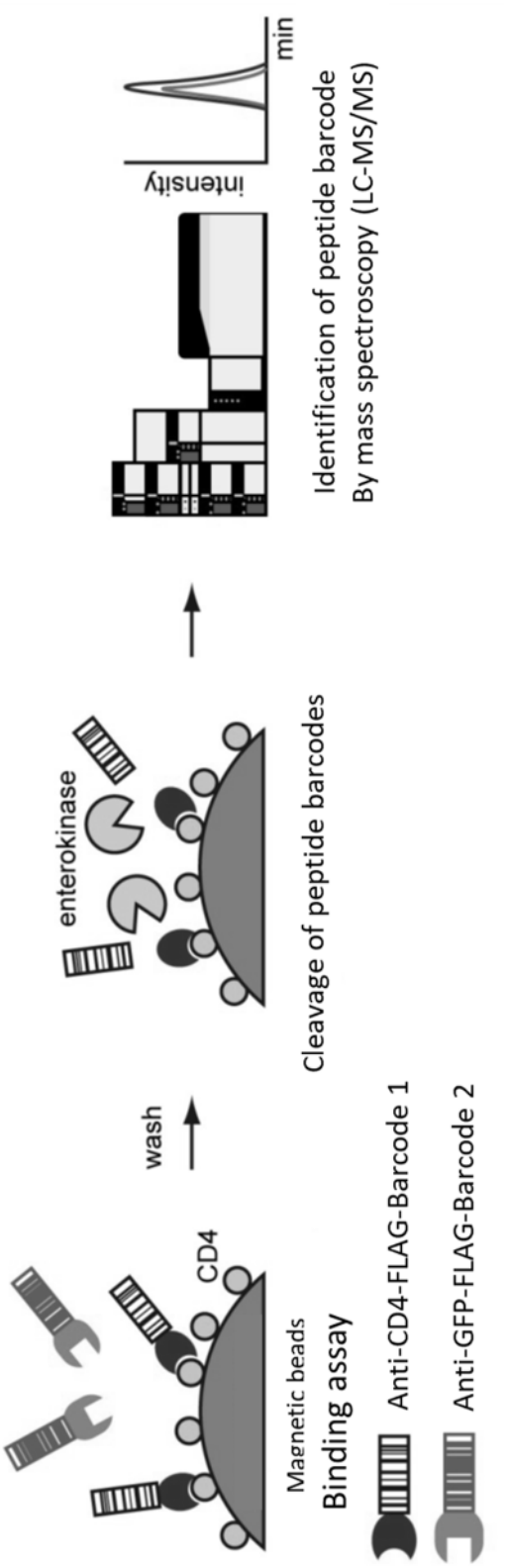
[Fig. 4]


70
60
50
40
30
20
10
0
Concentration [μg/mL]
*
Anti-CD4-FLAG
Anti-CD4-Barcode 1
Anti-GFP-FLAG
Anti-GFP-Barcode 2

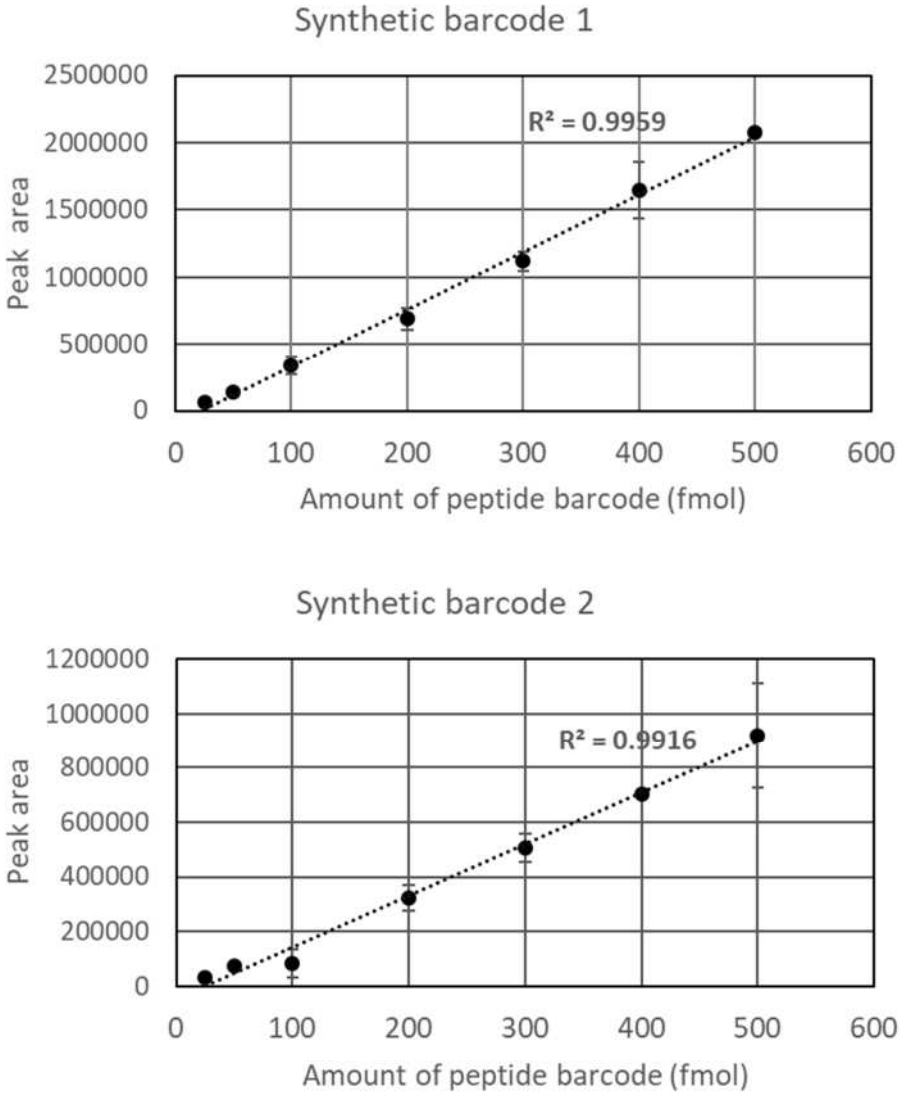
[Fig. 5]


Primary Antibody:
Secondary Antibody:
Nuclear Staining:
None
Anti-FLAG-AF488
DAPI
Anti-CD4-FLAG-Barcode 1
Anti-FLAG-AF488
DAPI
Anti-CD4-FLAG-Barcode 2
Anti-FLAG-AF488
DAPI
HEK293
WT
HEK293
pCAGGS-CD4-myc
20 μm

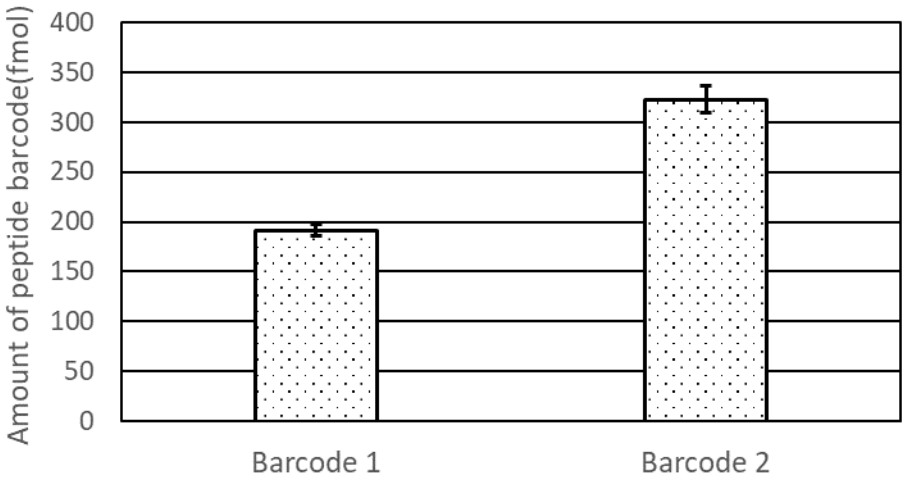
[Fig. 6]


Anti-GFP-FLAG-Barcode 2
Anti-CD4-FLAG-Barcode 1
Binding assay
Magnetic beads
CD4
wash
enterokinase
Cleavage of peptide barcodes
Identification of peptide barcode
By mass spectroscopy (LC-MS/MS)
intensity
min

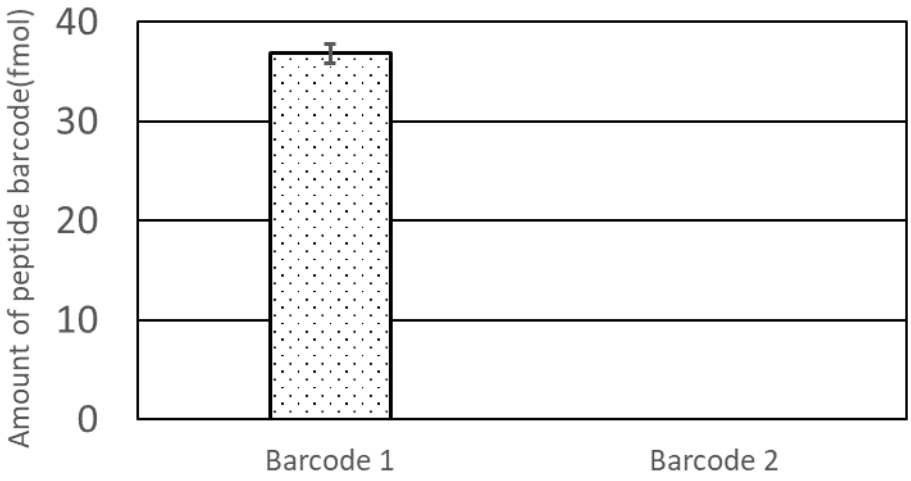
[Fig. 7]


Synthetic barcode 1
R² = 0.9959
Peak area
2500000
2000000
1500000
1000000
500000
0
0
100
200
300
400
500
600
Amount of peptide barcode (fmol)
Synthetic barcode 2
R² = 0.9916
Peak area
1200000
1000000
800000
600000
400000
200000
0
0
100
200
300
400
500
600
Amount of peptide barcode (fmol)

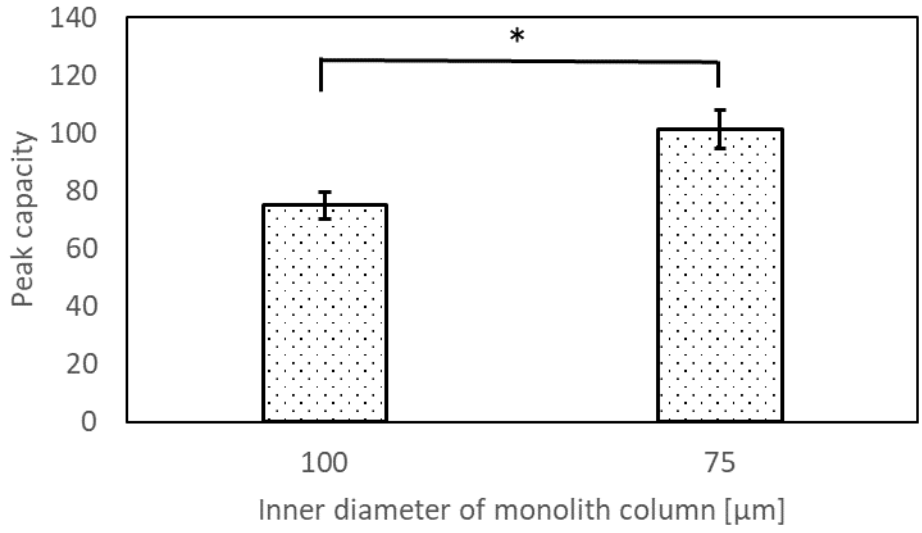
[Fig. 8]


Amount of peptide barcode(fmol)
400
350
300
250
200
150
100
50
0
Barcode 1
Barcode 2

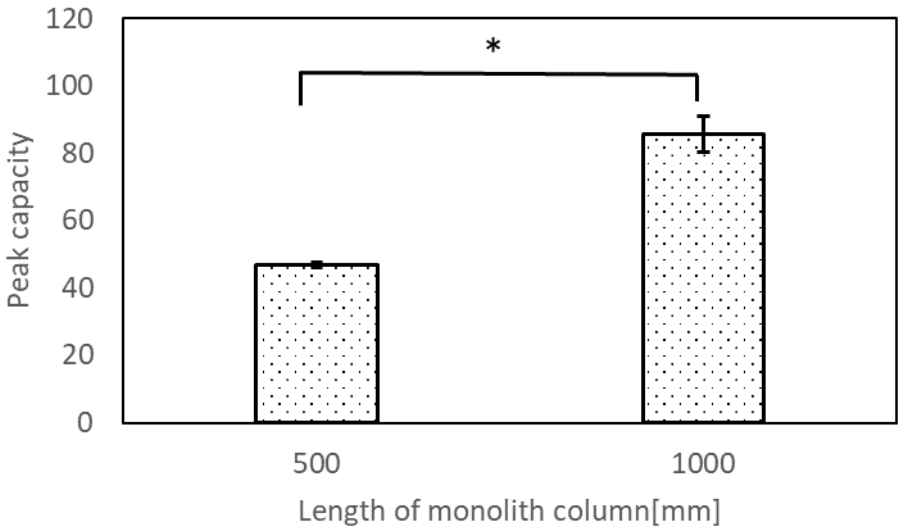
[Fig. 9]


Amount of peptide barcode(fmol)
40
30
20
10
0
Barcode 1
Barcode 2

[Fig. 10]


140
120
100
80
60
40
20
0
Peak capacity
*
100
75
Inner diameter of monolith column [μm]

[Fig. 11]


120
100
80
60
40
20
0
Peak capacity
*
500
1000
Length of monolith column[mm]