

# T Integrin

2

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\*

I. T TcR cross-linking  
 coreceptor coreceptor ligand(counterreceptor)  
 / T MHC-peptide TcR  
 가 coreceptor  
 /  
 1) accessory receptor  
 (triggering) costimulatory receptor 6),  
 (cascade reaction) MHC-peptide/TcR costimulatory  
 cytokine receptor T  
 가 7) (adhesion molecule) B, T  
 Jenkins Johnson Laneway Golstein  
 가 -ligand (primary lymphoid tissue)  
 cross-talk (homing)  
 5) T T cell antigen  
 receptor(TcR) major (target cell)  
 histocompatibility complex(MHC) peptide binding  
 groove  
 T 가  
 T (anergy)  
 MHC-peptide

(inward signaling) 가 , T- 23)가 . T B 20 - 22)

CD2/Lymphocyte Function associated Antigen-3(LFA-3), Intercellular Adhesion Molecule - 1 (ICAM - 1) / LFA - 1 T 가 ,

(costimula tion) . MHC II/CD4, 4- 1BB/4-1BBL, CD27/B7, CD40/CD40L Vey 17), Isler 13) ( ) Li 16),

costimulator receptor-ligand T - ligand (sig naling receptor)

7) T THP - 1 가

T (effector) B THP - 1 , Clark, 1,25(OH)<sub>2</sub>D<sub>3</sub> ,

Ledbetter 5) helper T HuT78 THP - 1 IL - 1

. T 가 cytokine 8-10) (resident) THP - 1 1,25(OH)<sub>2</sub>D<sub>3</sub> ,

T , / , try , flow cytome - HuT78

11) THP - 1 , 가 T / ,

가 T 가 /

가 IL - 1, ,

TNF metalloproteinase 12 - 19), T 가

/ (intrinsic proinflammatory function) . II.

/ T 가

1. THP - 1

promyelocyte THP - 1 1:8 THP - 1 HuT78  
 fetal calf serum 10% penicillin strep - IL - 1  
 tomycin(Sigma) 100U/Mℓ, 100μg/Mℓ,  
 RPMI1640(Gibco) 5%  
 CO<sub>2</sub>, 37 4. IL - 1 ELISA  
 1,25 dihydroxycholecalciferol  
 [ 1,25(OH)<sub>2</sub>D<sub>3</sub>, Sigma ], human inter - IL - 1 Sandwich  
 feron - gamma(hIFN - , Genzyme) 0.2 M carbon -  
 THP - 1 , HuT78 ELISA 20μg/Mℓ  
 flow mouse anti - human(h)IL - 1  
 cytometry (Genzyme) ELISA plate 4 24  
 coating , 0.05% Tween 20/PBS 5  
 2. HuT78 1% bovine serum  
 albumin(BSA)/PBS 37 2 block  
 T HuT78 THP - 1 recom -  
 phytohemag - binant hIL - 1 (Genzyme) ,  
 glutinin(PHA, 1μg/Mℓ) 12 - o - tetrade - well  
 canoylphorbol 13 - acetate(TPA, 5 ng/Mℓ) 37 30  
 48 phosphate 5 . Rabbit anti - hIL - 1  
 buffered saline(PBS) 3 1% (Genzyme) 10μg/Mℓ 37  
 paraformaldehyde(PFA)/PBS 4 2  
 , PBS 3  
 THP - 1 4  
 .  
 HuT78 , substrate 0.02% H<sub>2</sub>O<sub>2</sub>가  
 tetramethylbenzidine/DMF 1:1  
 well 가 10  
 . 1 M H<sub>2</sub>SO<sub>4</sub>  
 가 450 nm  
 ELISA reader(BioRad) .  
 duplicate  
 blank  
 IL - 1 IL - 1  
 .  
 3. THP - 1 HuT78  
 1,25(OH)<sub>2</sub>D<sub>3</sub>, IFN - ,  
 THP - 1 PBS 2  
 5 × 10<sup>5</sup> cells/Mℓ  
 . PHA/TPA ,  
 PFA HuT78 4 ×  
 10<sup>6</sup>cells/Mℓ 24 5.  
 well culture plate 200μℓ , flow cytometry  
 THP - 1 200μℓ 가 .

1,25(OH)<sub>2</sub>D<sub>3</sub> ,  
 THP - 1 PBS 2 1% 6.  
 BSA/PBS(BSA/PBS) 2 × 10<sup>6</sup>/Mℓ SigmaPlot pro -  
 . Microtube 1 ml gram .  
 (cell pellet) mouse anti - HLA - III.  
 DR,DQ,DP (Pharmingen),  
 mouse anti - Mac - 1 1. THP - 1/HuT78 THP - 1  
 (Pharmingen), mouse anti - ICAM - 1 IL - 1  
 (Pharmingen) 1:100  
 BSA/PBS 200μℓ . HuT78 THP - 1  
 tube 30 THP - 1 가 IL - 1  
 BSA/PBS 1 , fluorescein HuT78  
 isothiocyanate(FITC) - conjugated goat PHA/TPA HuT78 PFA  
 anti - mouse IgG (Pierce) 1:200 THP - 1  
 20 THP - 1 IL - 1 833 4336  
 . BSA/PBS 2 ng/Mℓ , HuT78 THP - 1  
 1% PFA/1% BSA/PBS 10 5  
 , 1 250μℓ BSA/PBS IL - 1 가 . THP - 1  
 fluorescence activated cell  
 sorter(FACStar, Beckton Dickinson) HuT78 ,  
 IL - 1 가 ,

Table 1. IL - 1 production by THP - 1 cells exposed to fixed HuT78 cells

| HuT78 cells  |                                 | THP - 1 cells | (pg/ml)                          |
|--------------|---------------------------------|---------------|----------------------------------|
| +            | -                               |               |                                  |
| -            | Medium                          | +             | <100                             |
| -            | Supernatant of stimulated HuT78 | -             | <100IL - 1 production by THP - 1 |
| -            | Supernatant of stimulated HuT78 | +             | <100                             |
| Unstimulated | -                               | -             | <100                             |
| Unstimulated | -                               | +             | 833                              |
| Stimulated   | -                               | -             | <100                             |
| Stimulated   | -                               | +             | 4336                             |

HuT78 cells were stimulated for 48h with PHA(1μg/Mℓ)/TPA(5ng/Mℓ), fixed, and cultured at 37 for 48h with or without THP - 1 cells.

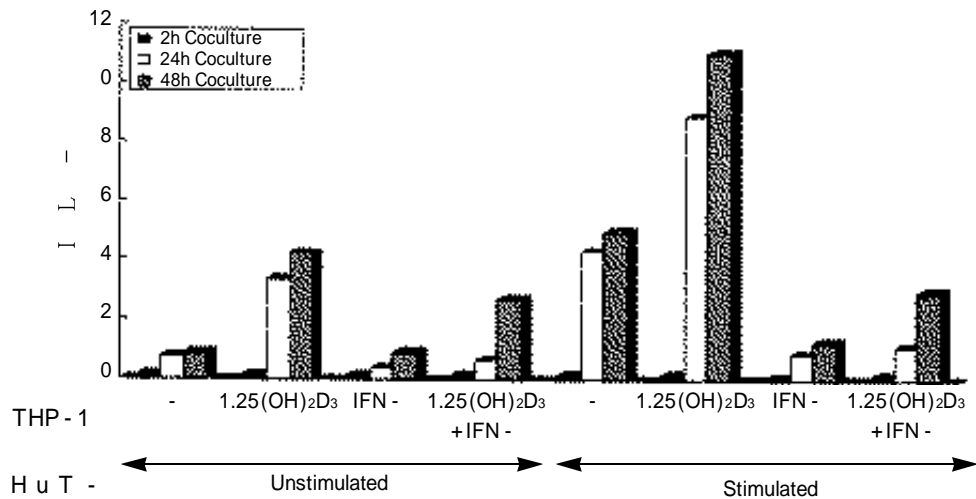


Figure 1. Effect of preincubation condition of THP-1 contact duration between THP-1 and HuT78, and stimulation condition of HuT78 on IL-1 production by THP-1 cells. THP-1 cells were untreated or pretreated with  $10^{-8}M$   $1,25(OH)_2D_3$  for 4 days, 500U/ml IFN- $\gamma$  for 3 days, or both (IFN- $\gamma$  was added at second day of  $1,25(OH)_2D_3$  treatment). HuT78 cells were unstimulated or stimulated with PHA/TPA for 48h and fixed with 1% PFA. Supernatant was collect-

HuT78 IL-1 IL-1  
 HuT78 HuT78 , HuT78 THP-1 2, 24, 48  
 THP-1 가 , THP-1 THP-1  
 가가 HuT78 IL-1 가 1,25(OH)<sub>2</sub>D<sub>3</sub> THP-1 2  
 THP-1 IL-1 가 24 (3.35ng/  
 ML), 48 (4.21ng/ML)  
 (24 , 0.82ng/ML; 48 , 0.87ng/ML)  
 HuT78 4 5 가 IL-1 가  
 (Table 1). 500 U/ML IFN- $\gamma$  3  
 THP-1  
 2. THP-1 HuT78 IL-1 (0.38,  
 THP-1 IL-1 0.93 ng/ML), 1,25(OH)<sub>2</sub>D<sub>3</sub> IFN- $\gamma$   
 THP-1 (0.72, 2.70ng/ML)  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 IL-1 . PHA/TPA  
 IFN- THP-1 HuT78 THP-1  
 HuT78 THP-1 IL-1 HuT78  
 1 (Figure 1), IL-1  
 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> 4 THP-1  
 HuT78 가 HuT78

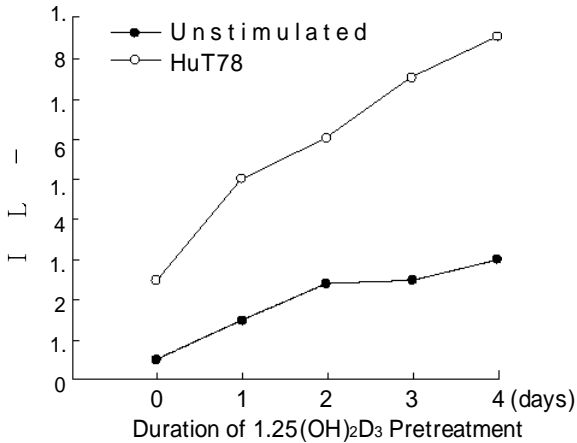


Figure 2. Time - dependent effect of 1,25(OH)<sub>2</sub>D<sub>3</sub> pretreatment on IL - 1 production by THP - 1 cells in THP1/HuT78 coculture condition, THP - 1 cells were pretreated with 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> for 0, 1, 2, 3, 4 days, and cocultured with PFA - fixed stim -

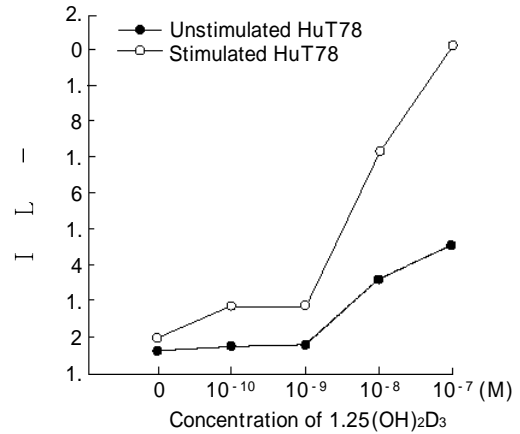


Figure 3. Dose - dependent effect of 1,25(OH)<sub>2</sub>D<sub>3</sub> pretreatment on IL - 1 production by THP - 1 cells in THP - 1/HuT78 coculture condition. THP - 1 cells were pretreated with various concentration of 1,25(OH)<sub>2</sub>D<sub>3</sub> for 4 days, and cocultured with PFA fixed

24, 48  
 Mℓ IL - 1 , 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 THP - 1  
 HuT78(3.35, 4.21ng/Mℓ)  
 HuT78(8.86, 10.95ng/Mℓ) 2.6  
 IL - 1 가  
 1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1  
 HuT78

IL - 1 가  
 3. HuT78 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 THP - 1 IL - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1  
 HuT78 IL - 1  
 가 가 , 1,25(OH)<sub>2</sub>D<sub>3</sub>

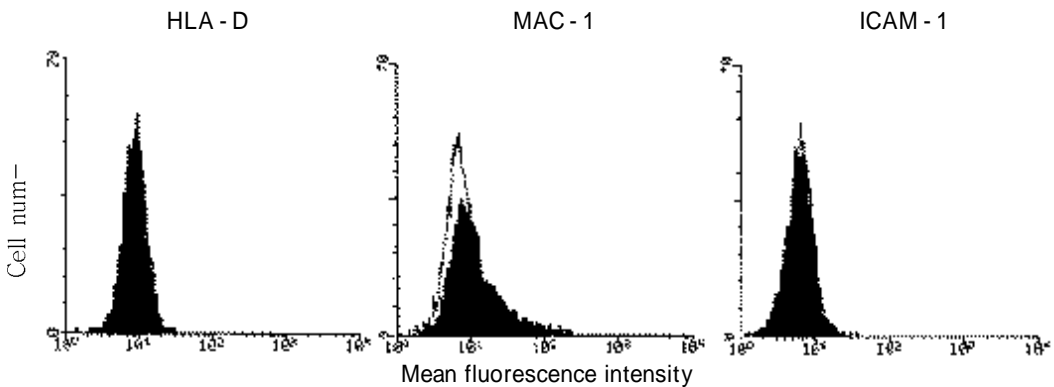


Figure 4. Histograms for HLA - D, Mac - 1, and ICAM - 1 expression on THP - 1 after incubation with 10<sup>-8</sup>M of 1,25(OH)<sub>2</sub>D<sub>3</sub> for 0 day(open profile) and 4 days(solid profile).

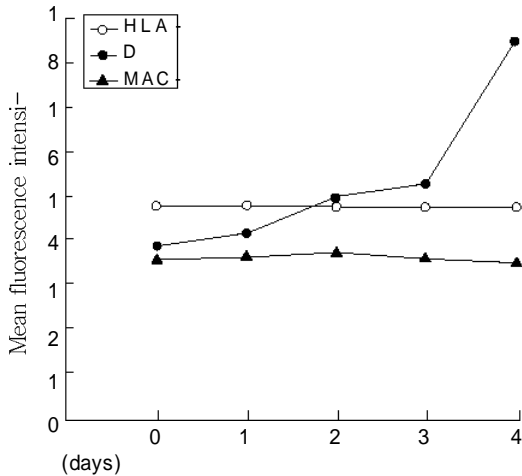


Figure 5. Time - dependent effect of 1,25(OH)<sub>2</sub>D<sub>3</sub> on the expression of surface glycoproteins of THP - 1. THP - 1 cells were treated with 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> for 0, 1, 2, 3, 4 days. Expression of HLA - D, Mac - 1, and

0.52, 0.96, 1.24, 1.45,  
 1.68 ng/Mℓ IL - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub> THP -  
 1 IL - 1 가 (Figure 2).  
 THP - 1 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 0, 10<sup>-10</sup>, 10<sup>-9</sup>, 10<sup>-8</sup>, 10<sup>-7</sup>M  
 HuT78  
 THP - 1 IL - 1 0.12, 0.15,  
 0.16, 0.53, 0.72 ng/Mℓ ,  
 HuT78 THP - 1  
 IL - 1 0.20, 0.38, 0.38, 1.24,  
 1.84 ng/Mℓ THP - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub> IL - 1  
 가 (Figure 3). THP - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 HuT78 가

THP - 1  
 , 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> 0,  
 1, 2, 3, 4 THP - 1 / 가 T  
 HuT78 THP - 1  
 0.14, 0.34, 0.48, 0.48, 0.58 ng/Mℓ IL -  
 1 , HuT78

4. THP - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 / 가 T  
 HLA - D (MHC)  
 costimulator ICAM -  
 1,

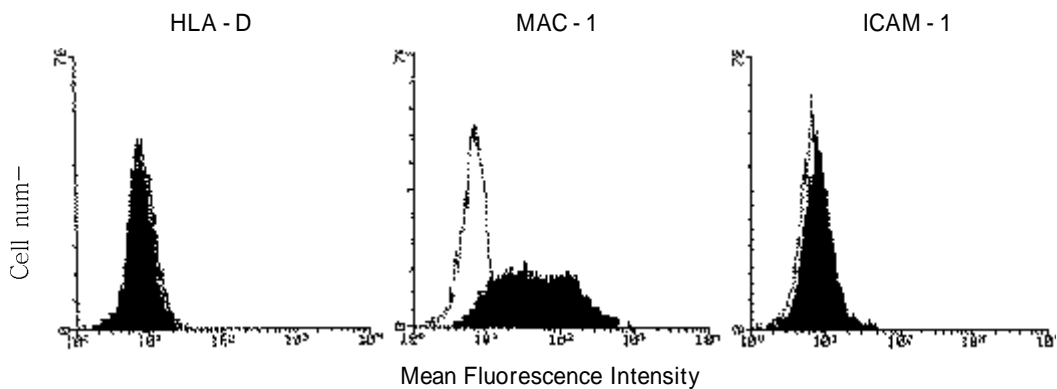


Table 6. Histograms for HLA - D, Mac - 1, and ICAM - 1 expression on THP - 1 after incubation with 0 M(open profile) and 10<sup>-7</sup>M(solid profile) of 1,25(OH)<sub>2</sub>D<sub>3</sub> for 4 days

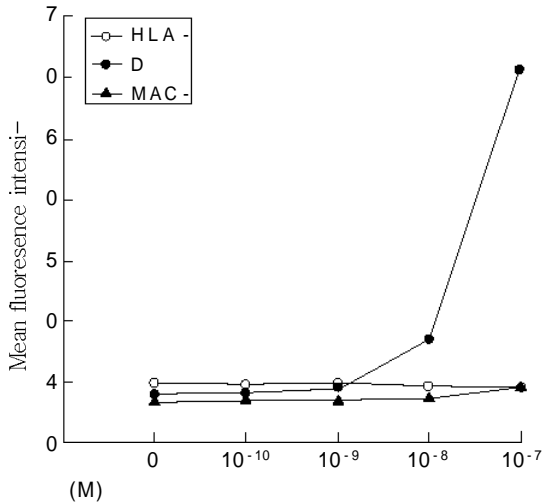


Figure 7. Dose - dependent effect of 1,25(OH)<sub>2</sub>D<sub>3</sub> on the expression of surface glycoproteins of THP - 1. THP - 1 cells were treated with various concentration of 1,25(OH)<sub>2</sub>D<sub>3</sub> for 4 days. Expression of HLA - D, Mac - 1, and

2 integrin family Mac - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 flow cytometry  
 THP - 1 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> 0 4  
 THP - 1 HLA - D(0 day,  
 mean fluorescence intensity(MFI) 9.45; 1  
 day, -; 2 days, 9.34; 3 days, 9.27; 4 days,  
 9.23), ICAM - 1(7.03; 7.16; 7.34; 6.97;  
 6.78) 가 , Mac -  
 1(7.59; 8.15; 9.70; 10.38; 16.76)  
 1,25(OH)<sub>2</sub>D<sub>3</sub>

(Figure 4, 5).

1,25(OH)<sub>2</sub>D<sub>3</sub> 0 10<sup>-7</sup>M  
 4 THP - 1  
 HLA - D(0M, MFI 9.45; 10<sup>-10</sup>M, 9.11; 10<sup>-9</sup>M, 9.21; 10<sup>-8</sup>M, 8.83; 10<sup>-7</sup>M, 8.53)  
 ICAM - 1( 7.03; 6.96; 6.88; 7.37; 9.04)

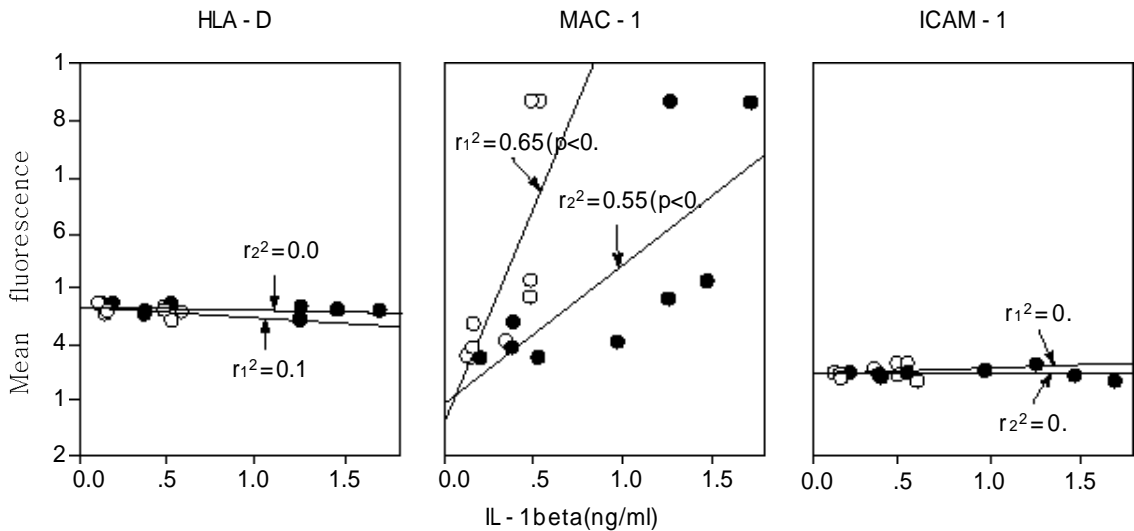


Figure 8. Correlation of IL - 1 production by THP - 1 cells upon coculture with fixed stimulated(closed circle) or unstimulated(open circle) HuT78 and surface glycoprotein expression of THP - 1(N=8). Before flow cytometric analysis for surface glycoprotein determination or coculture with HuT78 for detection of IL - 1 production, THP - 1 cells of each samples were pretreated with various concentration of 1,25(OH)<sub>2</sub>D<sub>3</sub> for various durations

r<sub>1</sub><sup>2</sup>: correlation coefficient between glycoprotein expression and IL - 1 production of THP - 1 exposed to unstimulated HuT78



Table 2. Effects of monoclonal antibodies on the production of IL - 1 by THP - 1 cells exposed to stimulated and fixed HuT78 cells

| THP - 1 <sup>a</sup> pretreatment    | MABs to cell surface <sup>b</sup> glycoproteins added | % Inhibition of IL - 1 production |
|--------------------------------------|---|-----------------------------------|
| -                                    | mouse IgG   | <5                                |
|                                      | HLA - D   | <5                                |
|                                      | Mac - 1   | 56                                |
|                                      | ICAM - 1  | <5                                |
| 1,25(OH) <sub>2</sub> D <sub>3</sub> | mouse IgG   | <5                                |
|                                      | HLA - D   | <5                                |
|                                      | Mac - 1   | 35                                |
|                                      | ICAM - 1  | <5                                |

<sup>a</sup> THP - 1 cells were pretreated or not with 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> for 3 days before experiments.

<sup>b</sup> THP - 1 cells were preincubated with monoclonal antibodies(1.5μg/ml) for 2h at 37 and cocultured with PHA/TPA - stimulated and fixed HuT78 cells for 48h.

<sup>c</sup> Results were expressed in percent inhibition compared with control values.

가 (10<sup>-7</sup>M) 1,25(OH)<sub>2</sub>D<sub>3</sub> (10%)  
 가(30%)  
 , Mac - 1 (8 )  
 (Figure 6, 7).  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 THP - 1  
 grin Mac - 1

(10<sup>-7</sup>M) 1,25(OH)<sub>2</sub>D<sub>3</sub> (10%)  
 가(30%)  
 , Mac - 1 (8 )  
 (Figure 6, 7).  
 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 THP - 1  
 grin Mac - 1

2 inte -  
 THP - 1 HuT78  
 THP - 1 HuT78  
 THP - 1 Mac - 1 2 integrin  
 (IL - 1 )

5. THP - 1 HuT78  
 (IL - 1 )

6. -

1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1  
 HuT78 THP - 1 THP - 1 HuT78  
 IL - 1 (Figure 2,3) , THP - 1 IL - 1 THP - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1 Mac - 1  
 (Figure 5, 7)  
 가 ,  
 PHA/TPA , THP - 1 HuT78 THP - 1  
 HuT78 THP - 1 IL - 1 IL - 1

mouse 17), THP - 1 , LPS T 가  
 IgG(mIgG) . mIgG, THP - 1 IL - 1 가  
 HLA - D , ICAM - 1 IFN - THP - 1  
 5% IL - 1 MHC II costimulator  
 Mac - 1 THP - 1 , ICAM - 1 가 ,  
 56%, 1,25(OH)<sub>2</sub>D<sub>3</sub> , 35% 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 IL - 1 (Table 2). CD14 CD11b  
 가 17,24).  
 Mac - 1 가 T - / IFN - 1,25(OH)<sub>2</sub>D<sub>3</sub>가  
 THP - 1  
 가 IFN -  
 가 , T  
 IV. 가  
 (cognate)  
 , T  
 1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1 가 ,  
 HuT78 cytokine .  
 THP - 1 (IL - 1 ) , 1,25(OH)<sub>2</sub>D<sub>3</sub> cognate  
 가 , 2 integrin T  
 Mac - 1(CD11b/CD18) THP - 1  
 , IL - 1 noncognate ,  
 가 Mac - 1 cytokine , respiratory burst  
 가  
 - Mac - 1 THP -  
 1/HuT78 17). Vey  
 THP - 1 IL - 1 , 17) 가  
 T 가 / HuT78 THP - 1 ,  
 Mac - 1 THP - 1 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 IL - 1 가 , IFN -  
 가  
 T 가  
 1,25(OH)<sub>2</sub>D<sub>3</sub>, IFN - 가 /  
 THP - 1 IL - 1 가 B 20,21,25), 16)  
 가 17,24), THP - 1 , T  
 가 IFN - /  
 LPS THP - 1 가 cytokine 22,26). HuT78  
 24), 1,25(OH)<sub>2</sub>D<sub>3</sub> T subcellular fraction HuT78

THP - 1 (13,17), trypsin (digestion) (Isler, 1993).  
 HuT78 tunicamycin THP - 1 IL - 1  
 Mac - 1 THP - 1 IL - 1 THP - 1 HuT78 56% (60%)  
 Dayer<sup>2)</sup> Mac - 1 ligand ICAM - 1  
 T Mac - 1 epitope(;  
 가 25 35 kDa Mac - 1  
 T 가 , T )가  
 가 100%  
 CD69<sup>27)</sup>, CD2<sup>26)</sup>,  $\alpha_2$  integrins<sup>17)</sup> 가 Mac - 1  
 가  
 T Dayer<sup>2)</sup> 3  $\alpha_2$  integrin  
 T 가 IL - 1 가  
 T - IL -  
 1 45 70% HuT78 THP - 1  
 T 10<sup>-8</sup>M 1,25(OH)<sub>2</sub>D<sub>3</sub> 3 IL -  
 가 Hara<sup>27)</sup> IL -  
 . CD2 LFA - 3 1 35% ,  
 IL - 1 가  
 Webb<sup>26)</sup> , Dayer<sup>2)</sup> THP - 1 Mac - 1  
 - CD2 가 IL - 1 15 25% 1,25(OH)<sub>2</sub>D<sub>3</sub> 가  
 , T -  
 IL - 1 , Mac - 1  
 CD2가 가 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 . Integrin Mac - 1  
 $\alpha_1$  integrin T - 가  
 $\alpha_1$  chain(CD29) IL - 1 , THP - 1 IL - 1  
<sup>28)</sup>,  $\alpha_2$  integrin Mac - 1 (Figure  
 CD11a, CD11b, CD11c 8), HuT78 PHA/TPA 가  
 IL - 1 IL - 1 Mac - 1  
 35%, 60%, 50%  
 ,  $\alpha_1$  integrin  $\alpha_2$  inte -  
 T  
 grin

THP - 1 IL - 1

Mac - 1

Integrin

chain chain

heterodimer

integrin , chain 20

1 integrin 2 integrin

2 integrin 3가

chain( L, M, X) 가 chain

2 chain LFA - 1( L 2,

CD11a/CD18), Mac - 1( M 2,

CD11b/CD18), p150/95( X 2,

CD11c/CD18) 3가 가 2 integrin

29). LFA - 1

ICAM - 1, ICAM - 2,

ICAM - 3 receptor - counterreceptor

30), Mac - 1 ICAM - 1,

(extracellular matrix) fibrino -

gen, (complement) C3bi,

LPS 30,31), p150/95

C3bi, fibrinogen 32). 2

chain

(leukocyte adhesion defi -

ciency, LAD)

2 integrin

33).

constitutive

integrin

ligand

가

integrin 가

34 - 36). , 가

integrin

가

1(CD11a/CD18)

LFA -

V.

37). inside - out signaling integrin  
가 integrin counterrecep -  
tor(ligand), , ICAM - 1 가

, integrin 가

38). T

CD3/TcR complex B

cross -

linking LFA - 1

가 34,36,39),

T integrin

upregulation 40,41). Integrin

upregulation

, T TcR, CD3, CD2, CD28,

CD44, ICAM - 3 B

HLA class II, , CD19,

CD40

29).

HuT78 CD4+

helper T

cytokine

T 가

9,16,42,43).

가 1,25(OH)<sub>2</sub>D<sub>3</sub>

, T - noncognate

T

/

/

,

/

Mac - 1

2

integrin

,

가

THP - 1 가 T  
 1,25(OH)<sub>2</sub>D<sub>3</sub> helper T  
 HuT78  
 THP - 1 IL - 1 ELISA  
 가 HuT78 THP - 1  
 가 , THP - 1  
 1,25(OH)<sub>2</sub>D<sub>3</sub> HLA - D, Mac - 1,  
 ICAM - 1  
 flow cytometry  
 HuT78 THP - 1  
 (IL - 1 )

가  
 6. Mac - 1 THP - 1  
 THP - 1 HuT78  
 IL - 1 35  
 56%  
 T 가  
 Mac - 1  
 2 integrin

## VI.

1. THP - 1 HuT78  
 IL - 1 ,  
 PHA/TPA HuT78  
 가 HuT78  
 THP - 1 IL - 1 5 가
2. 1,25(OH)<sub>2</sub>D<sub>3</sub> THP - 1  
 THP - 1 HuT78  
 IL - 1
3. THP - 1 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 HuT78  
 IL - 1 가
4. 1,25(OH)<sub>2</sub>D<sub>3</sub>  
 THP - 1 2  
 integrin family Mac - 1  
 가
5. THP - 1 HuT78  
 IL - 1 THP - 1 Mac - 1

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- Abstract -

## Immunochemical study on the Role of $\alpha_2$ Integrin in the Activation of Monocytes Upon Direct Contact with T Lymphocytes

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The modulation of leukocyte cell surface adhesion molecules may influence the development of cellular events that determine the course of the inflammatory process. Direct interaction between activated T cells and monocytes resulted in a large production of IL - 1 by monocytes. In this reactions, adhesion molecules play an important part, yet the role of them in T - monocytes interaction remain unclear. This study was undertaken in an effort to elucidate, 1) the influence of  $1.25(\text{OH})_2\text{D}_3$  - induced differentiation on the monocyte responsiveness to direct contact with T lymphocytes, and 2) the role of adhesion molecules on the T - monocyte direct interaction. Initially, I observed that direct contact of monocyte cell line THP - 1 with stimulated fixed T cell line HuT78 marked -

ly induces IL - 1 production by THP - 1.

IL - 1 production was higher when THP - 1 had been previously exposed to  $1.25(\text{OH})_2\text{D}_3$  as compared to control, with -  $1.25(\text{OH})_2\text{D}_3$  dose - dependent and exposure time - dependent manner. It was shown that  $1.25(\text{OH})_2\text{D}_3$  also increased the expression of  $\alpha_2$  integrin adhesion receptor Mac - 1 (CD11b/CD18) dose - and time - dependently, but did not increase the expression of human leukocyte antigen - D (HLA - D) and intercellular adhesion molecule - 1 (ICAM - 1). The IL - 1 producing activity of THP - 1 cells correlated well with the ability to induce the Mac - 1 expression on THP - 1 surface. Monoclonal antibody raised against relevant cell surface glycoproteins on THP - 1 were tested for their ability to block the response of THP - 1 to T cells. Antibody to Mac - 1 only partially blocked IL - 1 production by THP - 1, whereas antibodies to ICAM - 1 and HLA - D did not.

These data indicate that regulation of Mac - 1 expression on THP - 1 cells can alter the responsiveness of these cells to contact by activated T cells, however other unknown structures on the THP - 1 cells may be involved in this process also.