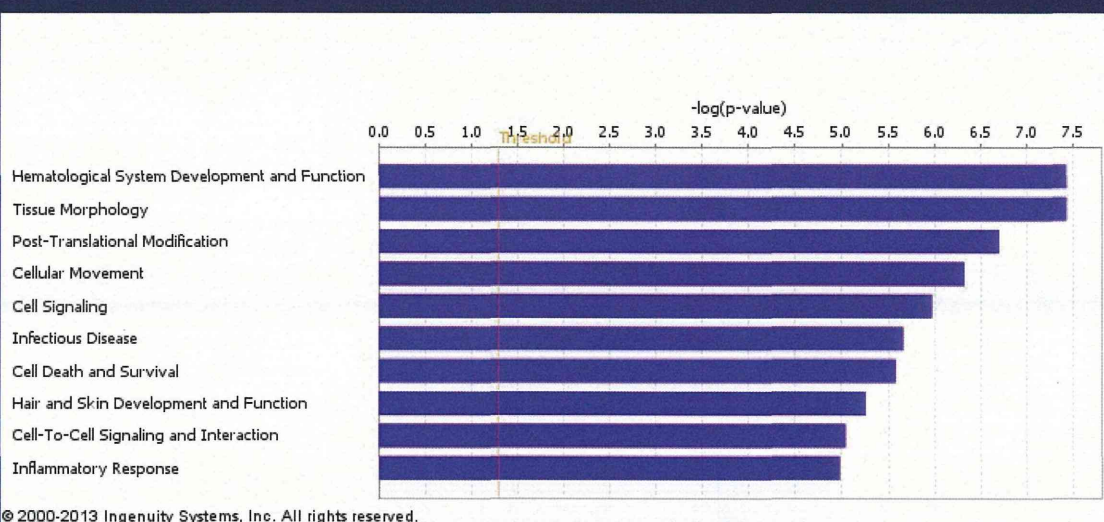


変動遺伝子数

	up	down
MWCNT 1d	977	51
MWCNT 3d	754	2
MWCNT 7d	37	92

$p < 0.05$, 0.5 copy/cell以上

2回目Pathway 解析 (1d MWCNT)



2回目Pathway 解析 (1d MWCNT)

Category	Functions Annotation	p-Value
Hematological System Development and Function	quantity of T lymphocytes	3.72E-08
Hematological System Development and Function	quantity of lymphocytes	3.25E-07
Hematological System Development and Function	quantity of leukocytes	1.03E-05
Hematological System Development and Function	quantity of blood cells	1.43E-05
Hematological System Development and Function	quantity of hematopoietic progenitor cells	6.30E-05
Hematological System Development and Function	quantity of thymocytes	8.71E-05

2回目Pathway 解析 (1d MWCNT)

Tissue Morphology	quantity of T lymphocytes	3.72E-08
Tissue Morphology	quantity of lymphocytes	3.25E-07
Tissue Morphology	quantity of leukocytes	1.03E-05
Tissue Morphology	thickening of epithelial tissue	1.38E-05
Tissue Morphology	quantity of blood cells	1.43E-05
Tissue Morphology	quantity of hematopoietic progenitor cells	6.30E-05
Tissue Morphology	thickening of basement membrane	6.86E-05
Tissue Morphology	quantity of thymocytes	8.71E-05

2回目Pathway 解析 (1d MWCNT)

Post-Translational Modification	phosphorylation of protein	2.00E-07
Post-Translational Modification	ubiquitination of protein	1.06E-05
Cellular Movement	cell movement	4.75E-07
Cellular Movement	migration of tumor cell lines	7.41E-07
Cellular Movement	cell movement of tumor cell lines	1.23E-06
Cellular Movement	migration of cells	3.55E-06
Cellular Movement	invasion of cells	2.96E-05

2回目Pathway 解析 (1d MWCNT)

Cell Signaling	protein kinase cascade	1.07E-06
Cell Signaling	serine phosphorylation	5.85E-05
Cell Signaling	cell surface receptor linked signal transduction	8.71E-05
Infectious Disease	Viral Infection	2.18E-06
Infectious Disease	infection of tumor cell lines	5.01E-05

2回目Pathway 解析 (1d MWCNT)

Cell Death and Survival	cell death of epithelial cell lines	2.62E-06
Cell Death and Survival	necrosis of kidney	1.45E-05
Cell Death and Survival	cell death of kidney cells	2.07E-05
Cell Death and Survival	apoptosis of epithelial cell lines	2.17E-05
Cell Death and Survival	cell death of epithelial cells	3.17E-05
Cell Death and Survival	apoptosis of fibroblast cell lines	3.30E-05
Cell Death and Survival	apoptosis of tumor cell lines	6.96E-05
Cell Death and Survival	cell death of kidney cell lines	7.18E-05
Cell Death and Survival	apoptosis	9.73E-05

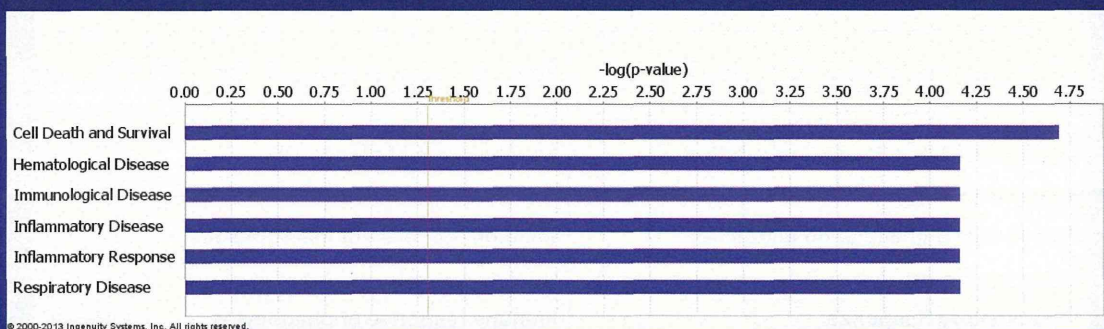
2回目Pathway 解析 (1d MWCNT)

Hair and Skin Development and Function	pallor	5.53E-06
Cell-To-Cell Signaling and Interaction	response of myeloid cells	9.10E-06
Cell-To-Cell Signaling and Interaction	immune response of phagocytes	1.06E-05
Cell-To-Cell Signaling and Interaction	phagocytosis of blood cells	1.23E-05
Cell-To-Cell Signaling and Interaction	immune response of macrophages	1.69E-05
Inflammatory Response	immune response of phagocytes	1.06E-05
Inflammatory Response	phagocytosis of blood cells	1.23E-05
Inflammatory Response	immune response of macrophages	1.69E-05
Inflammatory Response	immune response of cells	7.52E-05

2回目Pathway 解析 (1d MWCNT)

Cellular Function and Maintenance	phagocytosis of blood cells	1.23E-05
Cellular Function and Maintenance	organization of cytoplasm	2.23E-05
Cellular Function and Maintenance	organization of cytoskeleton	2.47E-05
Cellular Function and Maintenance	engulfment of blood cells	2.62E-05
Cellular Function and Maintenance	engulfment of cells	3.34E-05
Cellular Assembly and Organization	organization of cytoplasm	2.23E-05
Cellular Assembly and Organization	organization of cytoskeleton	2.47E-05
Cellular Assembly and Organization	quantity of autophagic vacuoles	5.45E-05
Cellular Compromise	condensation of nucleus	2.57E-05

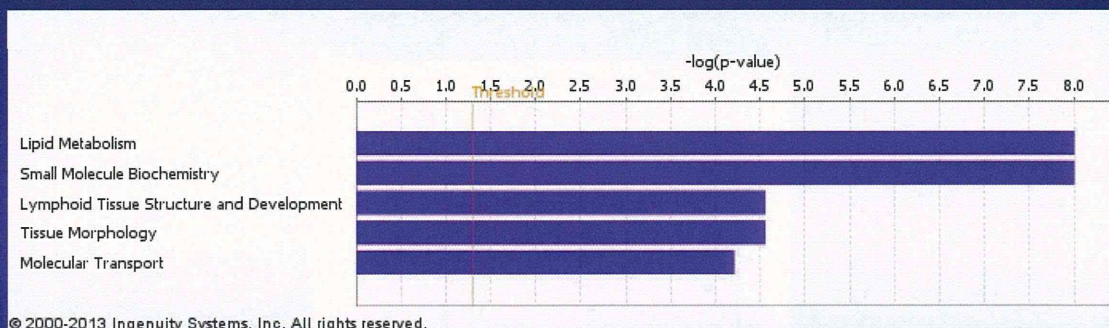
2回目Pathway 解析 (3d MWCNT)



2回目Pathway 解析 (3d MWCNT)

Category	Functions Annotation	p-Value
Cell Death and Survival	apoptosis of tumor cell lines	2.03E-05
Hematological Disease	allergic pulmonary eosinophilia	6.92E-05
Immunological Disease	allergic pulmonary eosinophilia	6.92E-05
Inflammatory Disease	allergic pulmonary eosinophilia	6.92E-05
Inflammatory Response	allergic pulmonary eosinophilia	6.92E-05
Respiratory Disease	allergic pulmonary eosinophilia	6.92E-05

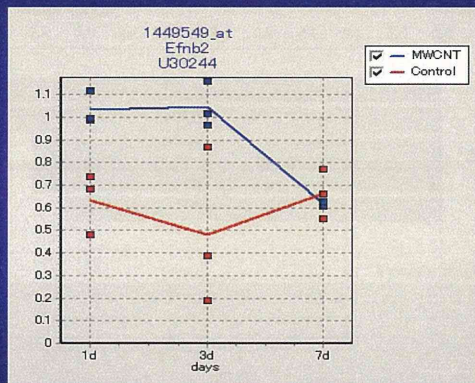
Pathway 解析 (7d MWCNT)



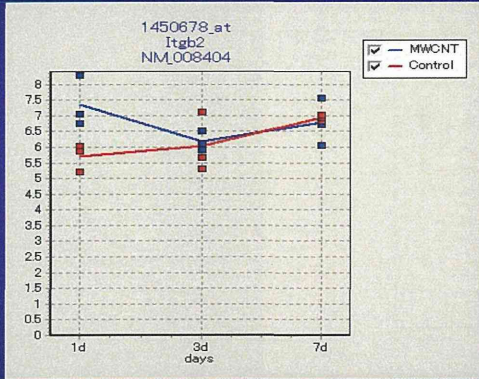
2回目Pathway 解析 (7d MWCNT)

Category	Functions Annotation	p-Value
Lipid Metabolism	metabolism of stearic acid	9.88E-09
Lipid Metabolism	metabolism of oleic acid	3.95E-08
Lipid Metabolism	metabolism of palmitic acid	9.85E-08
Lipid Metabolism	metabolism of linoleic acid	5.49E-07
Lipid Metabolism	metabolism of arachidonic acid	1.28E-05
Small Molecule Biochemistry	metabolism of stearic acid	9.88E-09
Small Molecule Biochemistry	metabolism of oleic acid	3.95E-08
Small Molecule Biochemistry	metabolism of palmitic acid	9.85E-08
Small Molecule Biochemistry	metabolism of linoleic acid	5.49E-07
Small Molecule Biochemistry	metabolism of arachidonic acid	1.28E-05
Lymphoid Tissue Structure and Development	quantity of lymphatic system cells	2.77E-05
Lymphoid Tissue Structure and Development	abnormal morphology of spleen primary B follicle	2.86E-05
Tissue Morphology	quantity of lymphatic system cells	2.77E-05
Molecular Transport	excretion of Na ⁺	6.16E-05

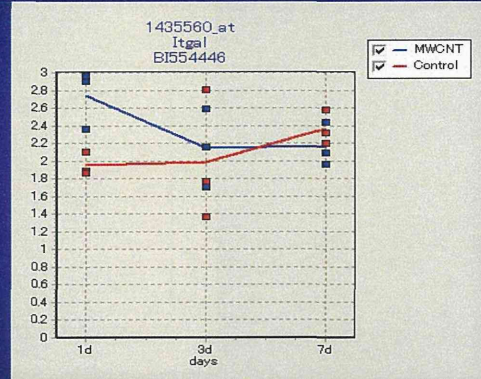
Ephrin b2 (Efnb2)



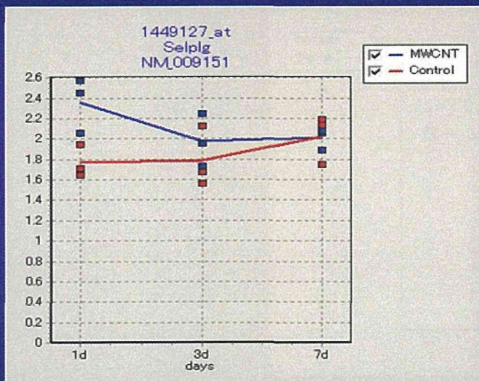
Integrin beta 2 (Itgb2)



Integrin alpha L (Itga1)



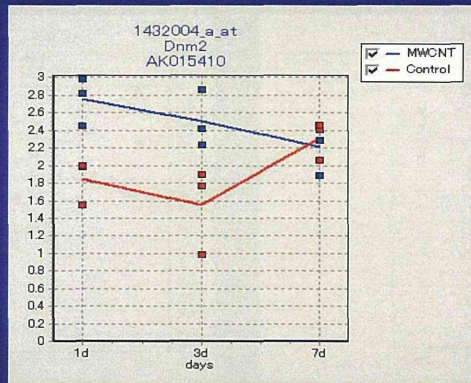
Selectin P ligand (Selplg)



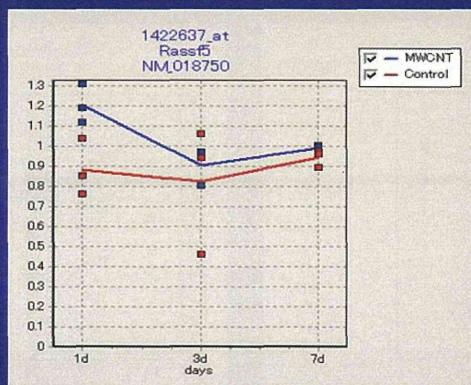
Selectin L (Sell)



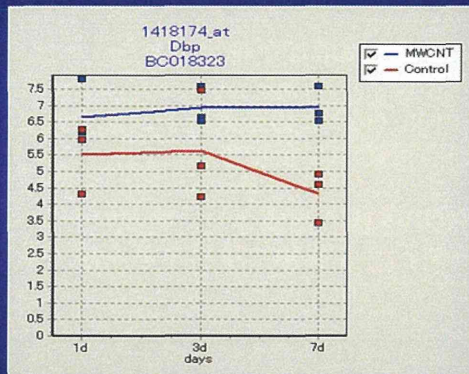
Dynamin2 (Dnm2)



Ras association domain family (Rassf5)

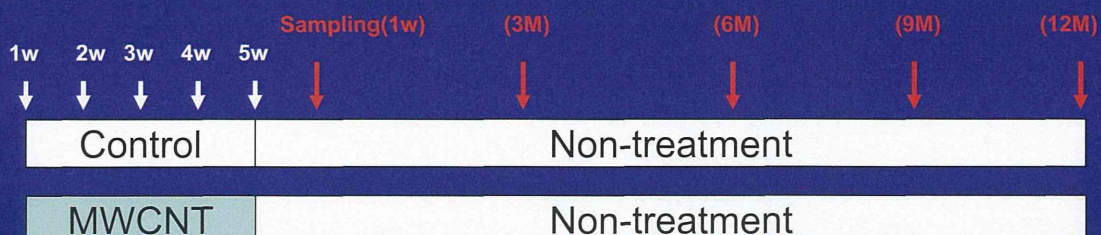


D-site albumin promoter binding protein (Dbp)



Experimental protocol

- Animal : Male C57BL/6J (12 weeks old) Charles River
- Chemical : Dispersed MWCNT (Mitsui)
- Administration: inhalation (10:00-12:00, 2hrs) 1time/w, 5w



- Dose: Control
MWCNT (3mg/m³)
- Sampling: 1w, 3M, 6M, 9M, 12M(14:00)
- Sample no./time: 3/group, total no. =3x2=6 BB2x2=4, Histology 3x2=6
- Microarray analysis: Affymetrix, gene chip mouse genome 430 2.0 array and "Percellome" method