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Quantikine[®] Human Endostatin ELISA

Endostatin, a 20 kDa proteolytic fragment of type XVIII Collagen, is well known for its anti-growth and anti-migratory effects on endothelial cells (ECs).^{1,2} It has received much attention for its potential use as an angiogenesis inhibitor capable of reducing the blood supply necessary for the maintenance and growth of tumors.¹ Several studies have shown that Endostatin causes profound tumor regression in animal models of cancer.^{1,3-9} Initial human clinical trials indicate that Endostatin treatments are nontoxic with modest effects on tumor progression.^{10,11}

Soluble Endostatin can inhibit EC migration and lead to rearrangements of the cytoskeleton that include the loss of actin stress fibers and focal adhesions.^{4,12,13} This can involve several binding partners including $\alpha_5\beta_1$ integrins, tropomyosin, and putative heparan sulfate proteoglycans,¹⁴⁻¹⁶ and affect signaling pathways

involving MAPK, FAK, the uPA system, Wnt, and the RhoA GTPase.^{13,16-18} In addition, Endostatin has the ability to suppress EC proliferation and induce apoptosis.¹⁸⁻²⁰

In humans, Endostatin levels have been used as a prognostic indicator, and are found elevated in several forms of cancer.²¹⁻³⁰ Additionally, increased levels are found in patients following treatment for rheumatoid arthritis, and in amyloid plaques associated with Alzheimer's disease.^{31,32}

In addition to ECs, Endostatin may affect other cell types as well. For instance, overexpression of Endostatin can cause developmental abnormalities in early *Xenopus* embryos, potentially due to deficient Wnt signaling and subsequent promotion of β -Catenin degradation.¹⁸ Further, interaction with cell surface Glypicans is important for Endostatin-

mediated inhibition of renal epithelial cell migration, and ureteric bud outgrowth and branching.^{14,33} Lastly, ectopic expression of the Endostatin homolog in *C. elegans* leads to neuronal migratory and axon pathfinding defects.³⁴

The Quantikine human Endostatin Immunoassay is a 4.5 hour solid phase ELISA designed to measure Endostatin in cell culture supernates, serum, and plasma.

References

For a complete list of references, please visit www.RnDSystems.com/QHE

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ELISA & Activity Assay Kits

ANALYTE	SPECIES	CATALOG #	SENSITIVITY	RANGE	SIZE
Adiponectin/Acrp30	mouse	MRP300	0.25 ng/mL	0.156-10 ng/mL	1 Kit
E-Cadherin	human	DCADE0	0.39 ng/mL	0.31-20 ng/mL	1 Kit
Endostatin	human	DNST0	0.23 ng/mL	0.31-10 ng/mL	1 Kit
IL-10/CSIF	canine	CA1000	2.0 pg/mL	15.6-1000 pg/mL	1 Kit
◆ LIX	rat	RLX00	4.4 pg/mL	62.5-4000 pg/mL	1 Kit
MMP-3	mouse	MMP300	0.025 ng/mL	0.156-10 ng/mL	1 Kit
● OX40 Ligand/TNFSF4	human	DOXL00	3.29 pg/mL	31.3-2000 pg/mL	1 Kit

- TNF Superfamily
- ◆ Chemokines & Receptors

- Signal Transduction
- ▲ DNA Damage & Repair

These products are for research use only. Not for use in diagnostic procedures.



Hedgehog Interacting Protein (Hip)

The Hedgehog family of signaling molecules are key regulators of patterning and morphogenesis in a variety of tissues.¹ Mammals have three Hedgehog (Hh) proteins: Sonic (Shh), which is implicated in diverse developmental functions such as neural induction and lung morphogenesis; Indian (Ihh), which plays important roles in endochondral skeleton formation; and Desert (Dhh), which is implicated in male gonad development.¹ Misregulation of Hh signaling is implicated in tumor initiation and cancer progression in a variety of cell types.² Because of this and the diverse developmental roles of Hh proteins, antagonists of the Hh signaling pathway are of great therapeutic interest.³

Hip (Hedgehog-interacting protein) is a membrane bound glycoprotein that binds all three mammalian Hhs.⁴ The expression pattern of Hip correlates with its ability to interact with all three mammalian Hhs. It is expressed in a variety of organs, adjacent to sites of Hh expression. For instance, Shh is expressed in the epithelium of the lung, and Hip is found in the underlying lung mesenchyme.⁴

By binding Hh proteins, Hip regulates the extracellular availability of Hh ligand, thereby attenuating endogenous signaling.^{4,5} This model is supported by gain-of-function and loss-of-function experiments. First, transgenic mice that over express Hip in proliferating chondrocytes display skeletal defects similar to those observed in Ihh mutant mice.⁴ Second, Hip knock-out mice exhibit neonatal lethality with respiratory failure due to defective branching morphogenesis.⁵ This phenotype correlates with altered expression of Shh markers suggesting an increase in Shh signaling.⁵

References

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- Taipale, J. & P.A. Beachy (2001) *Nature* **411**:349.
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- Chuang, P.-T. & A.P. McMahon (1999) *Nature* **397**:617.
- Chuang, P.-T. *et al.* (2003) *Genes Dev.* **17**:342.

Recombinant Proteins

PROTEIN	SPECIES	CATALOG #	SOURCE	SIZE
AdiponectinG/Acrp30G	mouse	1119-AC-025	NSO	.25 µg
CD16b/FcγRIIIb	human	1597-FC-050	NSO	.50 µg
EphB1/Fc Chimera	rat	1596-B1-200	NSO	.200 µg
● Fas Ligand/TNFSF6	rat	1614-FL-025	NSO	.25 µg
◆ HCC-1/CCL14 (aa 28-93)	human	1578-HC-025	<i>E. coli</i>	.25 µg
Hedgehog Interacting Protein (Hip)	mouse	1568-HP-050	NSO	.50 µg
IFN-γ	equine	1586-HG-025	<i>E. coli</i>	.25 µg
IGFBP-1	mouse	1588-B1-025	NSO	.25 µg
IL-2	equine	1613-IL-020	<i>E. coli</i>	.20 µg
IL-4	rhesus macaque	1577-IL-010	<i>E. coli</i>	.10 µg
IL-6	canine	1609-CL-025	<i>E. coli</i>	.25 µg
◆ IL-8/CXCL8	canine	1608-CL-025	<i>E. coli</i>	.25 µg
IL-10	equine	1605-IL-010	<i>E. coli</i>	.10 µg
IL-28A	human	1587-IL-025	NSO	.25 µg
IL-29	human	1598-IL-025	NSO	.25 µg
MICB/Fc Chimera	human	1599-MB-050	NSO	.50 µg
■ MKK6	human	1604-MK-010	<i>E. coli</i>	.10 µg
Netrin-1	mouse	1109-N1-025	NSO	.25 µg
Notch-3/Fc Chimera	human	1559-NT-050	<i>Sf 21</i>	.50 µg
■ p38α/MAPK14 (Inactive)	human	869-P3-050	<i>E. coli</i>	.50 µg
SOST	mouse	1589-ST-025	NSO	.25 µg
TGF-β RII/(mouse)Fc Chimera	mouse	1600-R2-050	NSO	.50 µg
● TWEAK R (TNFRSF12)/Fc Chimera	mouse	1610-TW-050	<i>Sf 21</i>	.50 µg
VEGF	canine	1603-CV-010	<i>E. coli</i>	.10 µg

Proteases & Inhibitors

PRODUCT	SPECIES	CATALOG #	SOURCE	SIZE
Enteropeptidase/Enterokinase	human	1585-SE-010	NSO	.10 µg
clAP-2/HIAP-1	human	817-P2-050	<i>E. coli</i>	.50 µg
Kininogen (HMW)	human	1569-PI-010	NSO	.10 µg

Polyclonal Antibodies

ANTIBODY	SPECIES	CATALOG #	TYPE	SIZE
8D6 Antigen	human	AF1557	Goat IgG	.100 µg
α-Fetoprotein	human	AF1369	Chicken IgY	.100 µg
Cathepsin E	mouse	AF1130	Goat IgG	.100 µg
Cathepsin L	mouse	AF1515	Goat IgG	.100 µg
CD32/FcγRII	mouse	AF1460	Goat IgG	.100 µg
DRP-1	human	2321-PC-100	Rabbit Serum	.100 µL

- TNF Superfamily
- ◆ Chemokines & Receptors
- Signal Transduction
- ▲ DNA Damage & Repair

Polyclonal Antibodies

ANTIBODY	SPECIES	CATALOG #	TYPE	SIZE
ErbB2	human	.AF1129	Goat IgG	100 µg
ERK1/MAPK3	human/mouse/rat	.AF1575	Rabbit IgG	.50 µg
FABP2	rat	.AF1486	Goat IgG	100 µg
sFRP-1	human	.AF1384	Goat IgG	100 µg
Galectin-3	mouse	.AF1197	Goat IgG	100 µg
Growth Hormone R	mouse	.AF1360	Goat IgG	100 µg
phospho-GSK-3β (S9)	human/mouse/rat	.AF1590	Rabbit IgG	100 µg
H60	mouse	.AF1155	Goat IgG	100 µg
HAI-1	mouse	.AF1141	Goat IgG	100 µg
HAI-2	human	.AF1106	Goat IgG	100 µg
HIF-1α	human/mouse	.AB1536	Rabbit IgG	100 µg
HSP27	human/mouse	.AF1580	Rabbit IgG	.50 µg
IL-20	mouse	.AF1204	Goat IgG	100 µg
Livin	human	.AF1161	Goat IgG	100 µg
LOX-1	mouse	.AF1564	Goat IgG	100 µg
MMP-2	mouse	.AF1488	Goat IgG	100 µg
mTOR	human/mouse/rat	.AB1537	Rabbit IgG	100 µg
Osteopontin	human	.AF1433	Goat IgG	100 µg
Parkin-1	human	.AF1480	Goat IgG	100 µg
PDGF-C	human	.AF1560	Goat IgG	100 µg
phospho-p27 (T157)	human/mouse/rat	.AF1555	Rabbit IgG	100 µg
phospho-p70 S6 Kinase (T421/S424)	human/mouse/rat	.AF8965	Rabbit IgG	100 µg
Proliferin-related Protein (Plfr)	mouse	.AF1527	Goat IgG	100 µg
PTP1B	human/mouse/rat	.AF13661	Goat IgG	100 µg
Ret	human	.AF1485	Goat IgG	100 µg
Serpin D1	mouse	.AF1265	Goat IgG	100 µg
STAT5b	human/mouse	.AF1584	Rabbit IgG	.50 µg
TIM-3	mouse	.AF1529	Goat IgG	100 µg

Monoclonal Antibodies

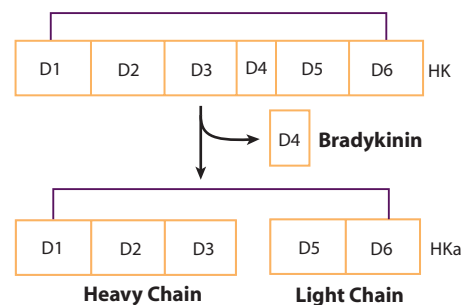
ANTIBODY	SPECIES	CATALOG #	CLONE	SIZE
4-1BB/TNFRSF9	mouse	.MAB9371	.158321	.500 µg
Akt3	human	.MAB1463	.199864	.100 µg
ATRIP	human/mouse/rat	.MAB1579	.194705	.100 µg
B7-2/CD86	rat	.MAB1340	.199602	.500 µg
BMP-7	human	.MAB3542	.164313	.500 µg
Calcineurin B	human/mouse/rat	.MAB1348	.212306	.100 µg
CCR4	human	.MAB1567	.205410	.500 µg
CD4	human	.MAB3791	.34915	.500 µg
CD8α	human	.MAB1509	.37006	.500 µg
CD64/Fcγ RI	human	.MAB1257	.10.1	.500 µg
CD133	mouse	.MAB1594	.217106	.250 µg
Cystatin S	human	.MAB1296	.201805	.500 µg

continued on page 4

Kininogen

Kininogen, also known as α -2-thiol proteinase inhibitor, is a secreted plasma glycoprotein that plays important roles in many processes such as fibrinolysis, thrombosis, inflammation, and coagulation.¹ High molecular weight kininogen (HK) consists of six domains and is processed by plasma kallikrein to release the vasodilator, bradykinin (Domain 4), and yield HKa. HKa is a disulfide-linked dimer containing a heavy chain (Domains 1 to 3) and a light chain (Domains 5 and 6). Domain 5 has been named kininostatin because it is the region primarily responsible for the HKa anti-angiogenic activity.² In comparison to HK or HKa, low molecular weight kininogen (LK), an alternatively spliced form from the same gene, consists of the identical domains 1 to 4 and a different domain 5. LK is not involved in blood clotting as it lacks domain 6.

Processing and domain structure of HK



Domain

Associated Function(s)

D1/Cystatin-like-1

Inhibits atrial natriuretic peptide

D2/Cystatin-like-2

Inhibits cathepsins and calpain

D3/Cystatin-like-3

Inhibits cathepsins; Involved in cell surface binding

D4/Bradykinin

A vasoactive, proinflammatory mediator

D5/Kininostatin

Involved in cell surface binding

D6

Binds prekallikrein and factor XI

References

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CD133 & Podocalyxin

Mouse Stem Cell Surface Markers

While stem cells are best defined functionally, a number of molecular markers including CD133 and Podocalyxin, have been used to identify various stem cell populations. Mouse CD133 (also known as Prominin 1) is a plasma membrane protein¹ and its human counterpart has been considered as an alternative to CD34 for hematopoietic^{2,3} and neural⁴ stem cell selection. In addition, CD133⁺ progenitor cells from peripheral blood and bone marrow can be induced to differentiate into endothelial cells *in vitro*.^{5,6} Podocalyxin (also known as Podocalyxin-like/PODXL or PCLP1) is a sialoglycoprotein that is structurally related to CD34.⁷ It is highly expressed in embryonic stem cells⁸ (Figure 1) and has been suggested to be a cell surface marker for hemangioblasts, the common precursors of hematopoietic and endothelial cells.⁹

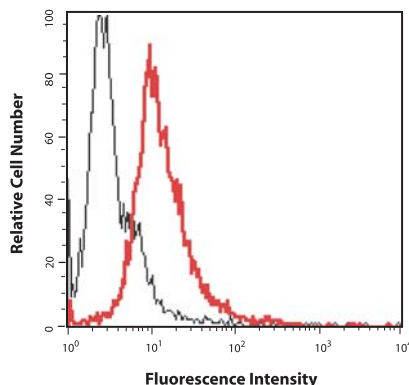


Figure 1. Detection of Podocalyxin on mouse embryonic stem cells (D3) using R&D Systems' rat anti-mouse Podocalyxin monoclonal antibody (Catalog # MAB1556). Cells were stained using a PE-conjugated goat anti-rat IgG secondary antibody (red). Control staining is shown in black.

References

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Monoclonal Antibodies

ANTIBODY	SPECIES	CATALOG #	CLONE	SIZE
<i>continued from page 3</i>				
EG-VEGF/PK1	human	MAB1209	188601	500 µg
Epigen	mouse	MAB1127	187240	500 µg
ERK1/ERK2	human/mouse/rat	MAB1576	216703	100 µg
FGF-9	human	MAB2731	36923	500 µg
FGF-10	human	MAB345	186803	500 µg
Frizzled-1	human/mouse	MAB11201	162531	100 µg
Frizzled-2	mouse	MAB1307	202102	500 µg
Galectin-4	human	MAB1227	198616	500 µg
GM-CSF	feline	MAB9872	159315	500 µg
gp130	human	MAB2281	29104	500 µg
Growth Hormone R	human	MAB1210	193804	500 µg
IFN-α/β R1	human	MAB245	85228	500 µg
IL-1α/IL-1F1	human	MAB2001	3405	500 µg
IL-12 p35	human	MAB1570	27537	500 µg
Jagged 1	human	MAB12771	188323	500 µg
JAM-2/VE-JAM	mouse	MAB9881	150005	500 µg
KGF/FGF-7	human	MAB2511	29568	500 µg
Lymphotoxin α ₁ β ₂ /α ₂ β ₁	human	MAB1370	135125	500 µg
MDC/CCL22	mouse	MAB4391	158132	500 µg
MMP-3	human	MAB513	50647	500 µg
Nbs1	human/mouse/rat	MAB1573	206919	100 µg
Netrin-4	human	MAB1254	191633	500 µg
Neurotrimin	human	MAB1235	175214	500 µg
OSM Rβ	mouse	MAB662	118125	100 µg
p21/CIP1/CDKN1A	human	MAB1047	195720	100 µg
p38δ/MAPK13	human	MAB1519	197202	500 µg
p70 S6 Kinase	human/mouse/rat	MAB8962	215247	100 µg
PDGF Rα	mouse	MAB1062	189208	500 µg
Podocalyxin	mouse	MAB1556	192703	100 µg
Ret	mouse	MAB482	64623	500 µg
SCF R/c-kit	human	MAB332	47233	500 µg
Siglec-3/CD33	human	MAB1137	6C5/2	500 µg
Synuclein-α	human	MAB1338	189105	500 µg
TCCR/WSX-1	human	MAB1479	191106	500 µg
Thymus Chemokine-1	rat	MAB1116	186701	500 µg
TNF-α/TNFSF1A	human	MAB2101	6401	500 µg
TNF RII/TNFRSF1B	human	MAB2261	22235	500 µg
TRAIL/TNFSF10	mouse	MAB1121	170533	500 µg
TRAIL R1/TNFRSF10A	human	MAB347	69036	500 µg
TRAIL R2/TNFRSF10B	mouse	MAB1540	118929	500 µg
TRAIL R3/TNFRSF10C	human	MAB6302	90906	500 µg
UNC5H3	human	MAB1005	200414	500 µg
VEGF ₁₆₄	mouse	MAB4931	156902	500 µg
VEGF R2/KDR	human	MAB3571	89115	500 µg
		MAB3572	89106	500 µg

● TNF Superfamily

◆ Chemokines & Receptors

■ Signal Transduction

▲ DNA Damage & Repair

Biotinylated Antibodies

ANTIBODY	SPECIES	CATALOG #	TYPE	SIZE
ALK-7	.rat	.BAM5771	.Mouse IgG _{2A}	.100 µg
BMP-7	.human	.BAM354	.Mouse IgG ₁	.250 µg
CD32/Fcγ RII	.mouse	.BAF1460	.Goat IgG	.50 µg
● CD40 Ligand/TNFSF5	.mouse	.BAF1163	.Goat IgG	.50 µg
Frizzled-1	.human/mouse	.BAM11201	.Rat IgG _{2A}	.100 µg
Galectin-1	.human	.BAF1152	.Goat IgG	.50 µg
	.mouse	.BAF1245	.Goat IgG	.50 µg
Glut4	.rat	.BAM1262	.Mouse IgG ₁	.250 µg
Glycophorin A/CD235a	.human	.BAM12281	.Mouse IgG ₁	.250 µg
GM-CSF	.feline	.BAM9873	.Mouse IgG ₁	.250 µg
gp130	.mouse	.BAM4681	.Rat IgG _{2A}	.100 µg
H60	.mouse	.BAF1155	.Goat IgG	.50 µg
IL-18 Rβ/IL-1 R7	.mouse	.BAF1520	.Goat IgG	.50 µg
Kallikrein 3	.human	.BAF1344	.Goat IgG	.50 µg
● OX40 Ligand/TNFSF4	.human	.BAF1054	.Goat IgG	.50 µg
■ STAT1 p91	.human	.BAF1490	.Goat IgG	.50 µg
TCCR/WSX-1	.human	.BAF1479	.Goat IgG	.50 µg
◆ Thymus Chemokine-1	.rat	.BAF1116	.Goat IgG	.50 µg
TLR1	.human	.BAF1484	.Goat IgG	.50 µg
TLR4	.human	.BAF1478	.Goat IgG	.50 µg
uPA	.human	.BAF1310	.Goat IgG	.50 µg

Fluorochrome-labeled Monoclonal Antibodies

ANTIBODY	SPECIES	CATALOG #	LABEL	CLONE	SIZE
ABC2	.human	.FAB995A	.Allophycocyanin	.5D3	.100 Tests
● BAFF/BlyS/TNFSF13B	.mouse	.IC1357P	.Phycoerythrin	.121808	.100 Tests
◆ CCR4	.human	.FAB1567A	.Allophycocyanin	.205410	.100 Tests
		.FAB1567F	.Fluorescein	.205410	.100 Tests
		.FAB1567P	.Phycoerythrin	.205410	.100 Tests
◆ CCR5	.human	.FAB1802A	.Allophycocyanin	.CTC5	.100 Tests
◆ CCR6	.human	.FAB195A	.Allophycocyanin	.53103	.100 Tests
◆ CXCR3	.human	.FAB160A	.Allophycocyanin	.49801	.100 Tests
◆ CXCR4	.human	.FAB170A	.Allophycocyanin	.12G5	.100 Tests
		.FAB173A	.Allophycocyanin	.44717	.100 Tests
◆ CXCR6	.human	.FAB699A	.Allophycocyanin	.56811	.100 Tests
DC-SIGN	.human	.FAB161A	.Allophycocyanin	.120507	.100 Tests
IL-10 Rβ	.human	.FAB874P	.Phycoerythrin	.90220	.100 Tests
M-CSF	.human	.IC2161A	.Allophycocyanin	.26786	.100 Tests
◆ MCP-1/CCL2	.human	.IC2791A	.Allophycocyanin	.23002	.100 Tests
MMP-1	.human	.IC9011P	.Phycoerythrin	.36607	.100 Tests
MMP-3	.human	.IC513P	.Phycoerythrin	.50647	.100 Tests
MMP-7	.human	.IC9071P	.Phycoerythrin	.111433	.100 Tests
SCF R/c-kit	.mouse	.FAB1356P	.Phycoerythrin	.180627	.100 Tests
Tie-2	.human	.FAB3131A	.Allophycocyanin	.83715	.100 Tests
		.FAB3131P	.Phycoerythrin	.83715	.100 Tests
VEGF	.human	.IC2931A	.Allophycocyanin	.23410	.100 Tests

CCR4

The human chemokine receptor CCR4, originally isolated from a basophilic cell line,¹ mediates the bioactivities of the chemokines TARC/CCL17 and MDC/CCL22.^{2,3} CCR4 expression is most often associated with the Th2 subset of T cells,⁴ but has also been described on IL-2-activated NK cells,⁵ activated dendritic cells,⁶ and platelets.⁷ The CCR4 expression pattern on a variety of cell types can now be assessed by flow cytometry (Figures 1 and 2) and IHC using our new anti-human CCR4 monoclonal antibody (Catalog # MAB1567) or its directly labeled fluorescein (Catalog # FAB1567F), phycoerythrin (Catalog # FAB1567P), or allophycocyanin (Catalog # FAB1567A) conjugates.

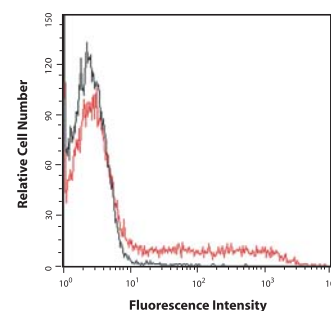


Figure 1. Detection of CCR4 on human peripheral blood lymphocytes using R&D Systems' PE-conjugated mouse anti-human CCR4 monoclonal antibody (Catalog # FAB1567P; red). Control staining is shown in black. Approximately 22% of the lymphocytes from this donor express CCR4.

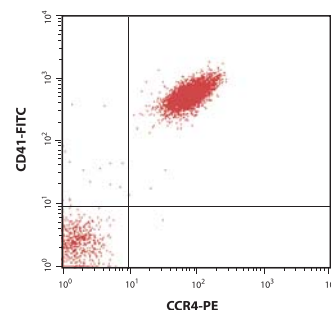


Figure 2. Detection of CCR4 and CD41 on human platelets using R&D Systems' PE-conjugated mouse anti-human CCR4 monoclonal antibody (Catalog # FAB1567P) and a FITC-conjugated mouse anti-human CD41 monoclonal antibody.

References

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phospho-ERK1/ERK2 DuoSet® IC

As part of the Raf-MEK-ERK signal transduction module, the Ser/Thr kinases ERK1 and ERK2 regulate cellular proliferation, differentiation, and survival. Both ERKs are activated by dual phosphorylation, at T202/Y204 for human ERK1 and T185/Y187 for human ERK2.¹ In the nucleus, active ERKs phosphorylate a number of transcription factors, including TCFs² and Myc.³ ERK1 and ERK2 also regulate transcription indirectly by phosphorylating kinases from the RSK⁴ and MSK⁵ families.

The phospho-ERK1/ERK2 DuoSet® IC ELISA kit (Catalog # DYC1018) joins R&D Systems' Signal Transduction Kits & Reagents group of products for measurement of phosphorylated intracellular signaling factors. DuoSet IC (Intracellular) ELISA Development Systems provide a fast, economical, and quantitative alternative to Western blots that can be easily adapted to high throughput analysis. The utility of the phospho-ERK1/ERK2 DuoSet IC is demonstrated in Figure 1.

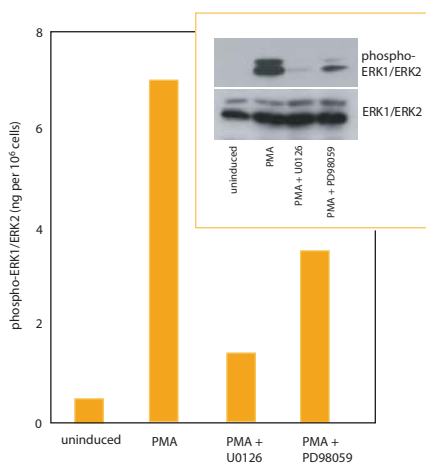


Figure 1. HeLa cells were incubated for 20 minutes with or without 200 nM PMA and with or without MEK inhibitors U0126 or PD98059. Cells were lysed and phosphorylated ERK1 and ERK2 were quantified using R&D Systems' phospho-ERK1/ERK2 DuoSet IC ELISA kit (Catalog # DYC1018). The same lysates were also immunoblotted (inset) with either anti-phospho-ERK1/ERK2 (Catalog # AF1018) or anti-ERK1/ERK2 (Catalog # MAB1576) antibodies. The DuoSet IC results correlate well with the amounts of phosphorylated ERK1 and ERK2 detected by Western blot.

References

1. Payne, D. *et al.* (1991) *EMBO J.* **10**:885.
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ELISpot Kits & Reagents

ELISpot kits are highly sensitive, microplate based assays for the detection of cytokine secreting cells. Each ELISpot Development Module contains sufficient reagents for 5 (96-well) microplates.

PRODUCT	SPECIES	CATALOG #	SIZE
ELISpot Kits			
IL-1 β /IL-1F2	porcine	EL681	.1 Kit
IL-5	mouse	EL405	.1 Kit
IL-13	mouse	EL413	.1 Kit
• TNF- α /TNFSF1A	porcine	EL690	.1 Kit
ELISpot Development Modules			
GM-CSF	feline	SEL987	.1 Kit
IFN- γ	feline	SEL764	.1 Kit
	primate	SEL961	.1 Kit
IL-10	canine	SEL735	.1 Kit
	feline	SEL736	.1 Kit
◆ MIG/CXCL9	human	SEL392	.1 Kit
◆ RANTES/CCL5	human	SEL278	.1 Kit
	mouse	SEL478	.1 Kit

ELISA & Activity Assay Development Kits

DuoSet® ELISA Development Systems

These kits contain the basic components required to develop an immunoassay to measure natural or recombinant proteins. Each DuoSet kit provides a protocol optimized for cell culture supernates. All standards are mass-calibrated for immunoassay and all components undergo quality control testing to eliminate lot-to-lot variability. Each kit provides sufficient reagents for approximately 15 plates. Also available in 45 plate Economy Packs.

PRODUCT	SPECIES	CATALOG #	SIZE
ErbB3	human	DY348	.15 Plates
• TRAIL/TNFSF10	human	DY375	.15 Plates
Ubiquitin+1	human	DY703	.15 Plates
VCAM-1/CD106	human	DY809	.15 Plates

See page 8 for MMP/TIMP Complex ELISA Development Systems.

DuoSet® IC Intracellular ELISA and Activity Assays

Each DuoSet IC kit provides sufficient reagents for approximately 2 or 5 plates.

PRODUCT	SPECIES	CATALOG #	SIZE
▲ p21/CIP1/CDKN1A	human	DYC1047-2	.2 Plates
		DYC1047-5	.5 Plates
		DYC1047E	.15 Plates
■ phospho-ERK1/ERK2	human/mouse/rat	DYC1018-2	.2 Plates
		DYC1018-5	.5 Plates
		DYC1018E	.15 Plates

Primer Pairs

PRODUCT	SPECIES	CATALOG #	SIZE
◆ CXCR3	human	RDP-260-025	.25 Tests
◆ CXCR4	human	RDP-261-025	.25 Tests
IL-1 RI	human	RDP-254-025	.25 Tests
IL-1 RII	human	RDP-255-025	.25 Tests
IL-1 R6/IL-1 R rp2	human	RDP-251-025	.25 Tests
IL-20	mouse	RDP-250-025	.25 Tests
IL-27 p28	human	RDP-252-025	.25 Tests
	mouse	RDP-253-025	.25 Tests
◆ IP-10/CXCL10	human	RDP-257-025	.25 Tests
	mouse	RDP-258-025	.25 Tests
◆ MIG/CXCL9	human	RDP-259-025	.25 Tests
TLR1	human	RDP-262-025	.25 Tests
	mouse/rat	RDP-263-025	.25 Tests
TLR2	human	RDP-264-025	.25 Tests
	mouse/rat	RDP-265-025	.25 Tests
TLR3	human	RDP-266-025	.25 Tests
	mouse/rat	RDP-267-025	.25 Tests
TLR4	human	RDP-268-025	.25 Tests
	mouse/rat	RDP-269-025	.25 Tests
TLR5	human	RDP-270-025	.25 Tests
	mouse/rat	RDP-271-025	.25 Tests
TLR6	human	RDP-272-025	.25 Tests
	mouse/rat	RDP-273-025	.25 Tests
▲ XPE/DBB1	human/mouse/rat	RDP-256-025	.25 Tests

Matched Antibody Pairs

ANALYTE	SPECIES	CATALOG #	USE	SIZE
BMP-7	human	MAB3542	Capture	500 µg
		BAM354	Detection	.50 µg
		354-BP-010	Protein	.10 µg
IL-13 Rα1	human	MAB146	Capture	500 µg
		BAF152	Detection	.50 µg
		146-IR-100	Protein	.100 µg
◆ MIP-3α/CCL20	mouse	MAB7601	Capture	500 µg
		BAF760	Detection	.50 µg
		760-M3-025	Protein	.25 µg

Isotype Controls

PRODUCT	CATALOG #	SIZE
Rat IgG _{2B}	MAB0061	.500 µg

Cell Culture Reagents

PRODUCT	CATALOG #	SIZE
Cell Staining Kit	3437-100-K	.1 Kit
Poly-L-Lysine	3438-100-01	.100 mL

- TNF Superfamily
- ◆ Chemokines & Receptors

- Signal Transduction
- ▲ DNA Damage & Repair

IL-28 and IL-29

Class II cytokine receptor ligands include the type I and type II interferons (IFNs), interleukin 10 (IL-10), and IL-10-related proteins.¹⁻³ These proteins play an important role in regulating immune responses. IL-28A, IL-28B, and IL-29, also named IFN-λ₂, IFN-λ₃, and IFN-λ₁, respectively, are novel class II cytokine receptor ligands that are distantly related to members of the type I IFN and IL-10 families.^{4,5} The genes encoding these three cytokines are localized to chromosome 19 and each is composed of multiple exons with an organization similar to that found in genes encoding IL-10 family members. IL-28A shares 94% and 67% amino acid sequence identity with IL-28B and IL-29, respectively.

All three cytokines interact with the same heterodimeric receptor complex composed of an IL-10 receptor β (IL-10 Rβ) subunit and a second class II cytokine receptor subunit termed IL-28 Rα/IFN-λ R1. Upon ligand binding to the receptor complex, Jak kinases are activated to tyrosine phosphorylate STAT1 and STAT2. Phosphorylated STAT1 and STAT2 combine with IRF-9 (IFN-regulatory factor 9) to form the heterotrimeric ISGF3 (IFN-stimulated regulatory factor 3) transcription factor complex. ISGF3 is translocated to the nucleus and binds to the ISRE (IFN-stimulated response element) present in the regulatory regions of target genes.⁶ IL-28 and IL-29 exert biological activities that overlap those of the type I IFNs, including antiviral activity and up-regulation of MHC class I antigen expression. The differences in the physiological functions between the type I IFNs and these three novel cytokines remain to be defined.

References

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MMP/TIMP Complex DuoSet® Kits

for measuring TIMP-complexed MMPs

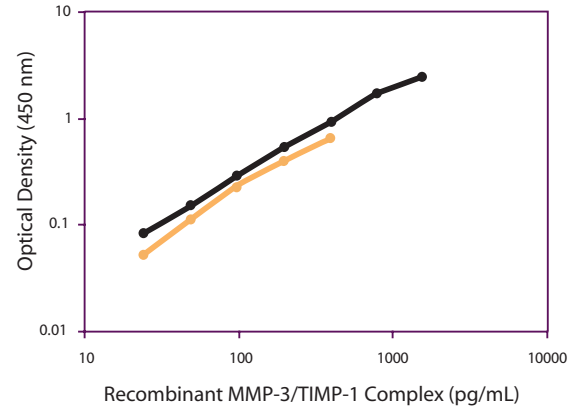
The levels of individual MMPs or their endogenous inhibitors, TIMPs, are often measured by ELISA-based assays in model systems to follow various normal and abnormal processes such as embryonic development, morphogenesis, tissue remodeling, arthritis, cancer, and cardiovascular disease. However, the exact molecular forms of MMPs cannot be easily revealed from these assays since MMPs can exist in pro, mature, and TIMP-complexed forms, each with distinct activities.

DuoSet ELISA Development Systems to measure the levels of MMP/TIMP complexes in cell culture supernates represent R&D Systems' latest effort to provide researchers with the tools necessary to examine specific forms of particular MMPs in natural samples (Figure 1). The performance of each kit has been optimized and quality tested for specificity, sensitivity, and reliability.



Please visit
<http://www.RnDSystems.com/DuoSet> for more details.

Figure 1. Detection of MMP-3/TIMP-1 complexes in TNF- α -stimulated normal human dermal fibroblast supernates using R&D Systems' human MMP-3/TIMP-1 complex DuoSet ELISA Development System (Catalog # DY1467). Dilution of natural human MMP-3/TIMP-1 complex (orange) shows a linear curve that is parallel to the standard curve obtained using the recombinant MMP-3/TIMP-1 complex (black).



ELISA Development Kits

DuoSet® ELISA Development Systems

These kits contain the basic components required to develop an immunoassay to measure natural or recombinant proteins. Each DuoSet provides a protocol optimized for cell culture supernates. All standards are mass-calibrated for immunoassay and all components undergo quality control testing to eliminate lot-to-lot variability. Each kit provides sufficient reagents for approximately 15 plates. Also available in 45 plate Economy Packs.

PRODUCT	SPECIES	CATALOG #	SIZE
MMP-2/TIMP-1 Complex	human	.DY1496	.1 Kit
MMP-2/TIMP-2 Complex	human	.DY1497	.1 Kit
MMP-2/TIMP-4 Complex	human	.DY1498	.1 Kit
MMP-3/TIMP-1 Complex	human	.DY1467	.1 Kit
MMP-3/TIMP-2 Complex	human	.DY1468	.1 Kit
MMP-3/TIMP-4 Complex	human	.DY1469	.1 Kit
MMP-9/TIMP-1 Complex	human	.DY1449	.1 Kit
MMP-9/TIMP-2 Complex	human	.DY1453	.1 Kit
MMP-9/TIMP-4 Complex	human	.DY1450	.1 Kit

See page 6 for additional ELISA Development Systems.



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