



Quantikine® Human Angiopoietin-1 ELISA

Angiopoietin-1 (Ang-1) is a secreted glycoprotein best known for its putative roles in vascular development.¹ It is a member of a family of growth factors that, in humans, also includes Ang-2 and Ang-4. Ang-3 appears to be the mouse counterpart to human Ang-4.² Of the members in the Angiopoietin family, Ang-1 and Ang-2 are the best understood. Both exhibit similar affinities to Tie-2, a receptor tyrosine kinase expressed primarily by endothelial cells.^{3,4}

Ang-1 acts as a positive regulator of blood vessel development, remodeling, and maturation. Deletion of the Ang-1 gene is embryonic lethal and is accompanied by cardiac defects and a generalized decrease in vascular complexity.⁵ In addition, Ang-1 stimulates increased vascularization when overexpressed in skin, an effect that may occur in synergy with VEGF.^{6,7} Although actions of the related family member Ang-2 on blood vessel growth are complex and context-dependent, it may act as a competitive inhibitor of Ang-1/Tie-2 activity under certain conditions.^{3,8} A decrease in the ratio of Ang-1 to Ang-2 has also been implicated in tumor-associated angiogenesis.⁹ Angiopoietin family activities are apparently not restricted to the blood vessel endothelia, as both Ang-1 and Ang-2 have possible involvement in the formation of the lymphatic vessels as well.^{8,10}

In addition to its effects on vessel growth, Ang-1 has also been implicated in other biological processes. For instance, Ang-1/Tie-2 signaling may help maintain hematopoietic stem cells in a quiescent state within the bone marrow.¹¹ It also enhances neutrophil and

eosinophil adhesion and migration, and regulates inflammation-associated blood vessel permeability.¹²⁻¹⁴ In the nervous system, Ang-1 may support the survival and growth of neurons.^{15,16}

R&D Systems Human Angiopoietin-1 Quantikine ELISA (Catalog # DANG10) is a 4.5 hour solid phase ELISA designed to measure Ang-1 levels in:

- serum
- saliva
- breast milk
- cell culture supernate
- platelet lysate
- normal plasma
- platelet-poor plasma

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ELISA & Activity Assay Kits

Analyte	Species	Sensitivity	Range	Catalog #	Size
Angiopoietin-1	Human	3.45 pg/mL	62.5-4000 pg/mL	DANG10	1 Kit
+ IFN-β	Mouse	NA	15.6-1000 pg/mL	42400-1	1 Kit
• TNF-α/TNFSF1A	Canine	2.4 pg/mL	7.8-500 pg/mL	CATA00	1 Kit
• TWEAK/TNFSF12	Mouse	0.72 pg/mL	3.125-200 pg/mL	MTWK00	1 Kit
VEGF	Rat	8.4 pg/mL	31.2-2000 pg/mL	RRV00	1 Kit

FGF-20

The fibroblast growth factor (FGF) family consists of at least 23 heparin-binding proteins.¹ All FGF family members have a 120 amino acid (aa) core FGF domain, that allows for a common tertiary structure. The structurally conserved core contains the heparin and receptor binding sites. FGF-9, 16, and 20 form one of the seven subfamilies within the FGF family. Although they lack a canonical signal peptide sequence as do FGF acidic, FGF basic, and FGFs 11 through 14, they are secreted proteins. All FGFs except 11 through 14, which remain intracellular, bind to and activate type I transmembrane receptor tyrosine kinases.^{1,2} They act on cells of mesodermal and neuroectodermal origin to regulate diverse physiologic functions including cell growth, pattern formation, embryonic development, metabolic regulation, cell migration, neurotrophic effects, angiogenesis, and tissue repair.^{1,2}

The cDNA sequence of FGF-20 predicts a 211 aa protein that shares 71 and 66% aa sequence identity with FGF-9 and FGF-16, respectively.^{3,4} FGF-20 is expressed specifically in the central nervous system and several cancer cell lines. It interacts with various isoforms of the FGF receptors and stimulates growth of fibroblasts, keratinocytes, human breast epithelial cells, various cancer cell lines, and promotes survival of dopaminergic neurons.^{4,5} In experimental animal models, FGF-20 was shown to have therapeutic activity in intestinal inflammation and to protect against oral mucositis from radiation and chemotherapy.^{6,7} The expression of FGF-20 and Dkk-1 is regulated by β -Catenin during development and tumorigenesis, implying that FGF-20 may play a role in the oncogenesis induced by the Wnt signaling pathway.⁸

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Recombinant & Natural Proteins

Protein	Species	Source	Catalog #	Size
❖ Aminoacylase/ACY1	Mouse	NS0	2700-ZN-020	20 μ g
◆ Artemin	Human	<i>E. coli</i>	2589-AR-025	25 μ g
○ Cadherin-6 (KCAD)/Fc Chimera	Human	NS0	2715-CA-050	50 μ g
● CD40 Ligand/TNFSF5 <i>Histidine-tagged</i>	Human	<i>E. coli</i>	2706-CL-025	25 μ g
CD83/Fc Chimera	Mouse	<i>Sf</i> 21	1437-CD-050	50 μ g
CD163	Human	NS0	1607-CD-025	25 μ g
○ CL-P1	Human	NS0	2690-CL-050	50 μ g
○ DC-SIGN/CD209/Fc Chimera	Hamster	NS0	161-DC-050	50 μ g
○ ESAM/Fc Chimera	Human	NS0	2688-EC-050	50 μ g
FGF-20	Human	<i>E. coli</i>	2547-FG-025	25 μ g
○ Galectin-4	Mouse	<i>E. coli</i>	2128-GA-050	50 μ g
Glucosamine (N-acetyl)-6-Sulfatase	Human	NS0	2484-SU-020	20 μ g
Glypican 5	Human	NS0	2607-G5-050	50 μ g
	Mouse	NS0	2689-G5-050	50 μ g
IL-1F5/FIL1δ	Mouse	<i>E. coli</i>	2714-ML-025	25 μ g
IL-5	Rhesus Macaque	NS0	2707-RM-025	25 μ g
IL-13	Rhesus Macaque	<i>E. coli</i>	2674-RM-025	25 μ g
IL-18/IL-1F4	Rhesus Macaque	<i>E. coli</i>	2548-RM-025	25 μ g
IL-27	Mouse	CHO	1834-ML-010	10 μ g
❖ Kallikrein 7	Human	NS0	2624-SE-010	10 μ g
❖ Kallikrein 13	Human	NS0	2625-SE-010	10 μ g
❖ Kallikrein 14	Human	NS0	2626-SE-010	10 μ g
Lipocalin-2/NGAL	Human	NS0	1757-LC-050	50 μ g
MULT-1	Mouse	NS0	2588-MU-050	50 μ g
Neuropoietin	Human	<i>E. coli</i>	2709-NP-025	25 μ g
Nogo-A/Fc Chimera	Rat	NS0	2445-NG-050	50 μ g
PGRP-S	Human	NS0	2590-PG-050	50 μ g
	Mouse	NS0	2696-PG-050	50 μ g
SR-AI/MSR	Human	NS0	2708-MS-050	50 μ g
SREC-I/Fc Chimera	Human	NS0	2409-SR-050	50 μ g
TCCR/WSX-1/Fc Chimera	Human	NS0	1479-TC-050	50 μ g
❖ Testican 3/SPOCK3	Mouse	NS0	2346-PI-050	50 μ g
● TNF-α/TNFSF1A	Feline	<i>E. coli</i>	2586-FT-025	25 μ g
❖ Tryptase-5/Prss32	Mouse	NS0	2634-SE-010	10 μ g
VEGF-B 186	Mouse	<i>Sf</i> 21	767-VE-010	10 μ g

Substrate

Product	Description	Catalog #	Size
❖ Boc-V-P-R-AMC	Fluorogenic Peptide Substrate	ES011	20 mg

Polyclonal Antibodies

Antibody	Species	Type	Catalog #	Size
○ AMIGO	Human	Sheep IgG	AF2565	100 μ g
■ Phospho-AMPKα1/2 (T174/T172)	Human	Rabbit IgG	AF2509	100 μ g
B7-H4	Mouse	Goat IgG	AF2154	100 μ g
○ BIG-H3	Mouse	Sheep IgG	AF2559	100 μ g
Biglycan	Human	Goat IgG	AF2667	100 μ g
■ Blk	Human/Mouse/Rat	Goat IgG	AF2679	100 μ g
❖ BMP-1/PCP	Human	Goat IgG	AF1927	100 μ g

Polyclonal Antibodies

Antibody	Species	Type	Catalog #	Size
■ c-jun	Human	Sheep IgG	AF2670	100 µg
■ Carbonic Anhydrase I	Human	Goat IgG	AF2180	100 µg
■ Carbonic Anhydrase II	Human	Sheep IgG	AF2184	100 µg
■ Carbonic Anhydrase III	Human	Goat IgG	AF2185	100 µg
■ Carbonic Anhydrase XIII	Human	Goat IgG	AF2194	100 µg
❖ Cathepsin 6	Mouse	Goat IgG	AF2178	100 µg
■ CCK-A R	Human	Rabbit IgG	AF2680	50 µg
■ CD4	Feline	Goat IgG	AF2597	100 µg
■ CD8α	Feline	Goat IgG	AF2598	100 µg
■ CD59b	Mouse	Goat IgG	AF2650	100 µg
■ CD155/PVR	Human	Goat IgG	AF2530	100 µg
■ CD200 R1	Mouse	Goat IgG	AF2554	100 µg
○ CD229/SLAMF3	Mouse	Goat IgG	AF2555	100 µg
○ CDCP1	Human	Goat IgG	AF2666	100 µg
○ Chemerin	Human	Goat IgG	AF2324	100 µg
○ Chitinase 3-like 1	Human	Goat IgG	AF2599	100 µg
○ CHL-1/L1CAM-2	Mouse	Goat IgG	AF2147	100 µg
○ Chondrolectin	Human	Goat IgG	AF2576	100 µg
○ Chordin-Like 2	Human	Goat IgG	AF2448	100 µg
❖ Complement Component C1s	Human	Sheep IgG	AF2060	100 µg
❖ Complement Component C3d	Mouse	Goat IgG	AF2655	100 µg
❖ Complement Factor D	Human	Goat IgG	AF1824	100 µg
■ CRISP-2	Human	Goat IgG	AF2575	100 µg
■ Crossveinless-2	Human	Sheep IgG	AF1956	100 µg
	Mouse	Goat IgG	AF2299	100 µg
◆ CXCL8/IL-8	Feline	Goat IgG	AF2277	100 µg
■ DDR2	Human	Goat IgG	AF2538	100 µg
■ ECF-L	Mouse	Goat IgG	AF2446	100 µg
■ Epimorphin	Mouse	Goat IgG	AF2568	100 µg
■ Exostosis-like 3	Human	Goat IgG	AF2635	100 µg
■ Fcγ RI/CD64	Human	Goat IgG	AF1257	100 µg
	Mouse	Goat IgG	AF2074	100 µg
■ FGF-16	Human	Sheep IgG	AF1212	100 µg
■ FGF-21	Human	Goat IgG	AF2539	100 µg
■ FGF-23	Human	Goat IgG	AF2604	100 µg
■ Phospho-Fit-3/FIk-2 (Y591)	Human	Rabbit IgG	AF368	50 µg
■ Gas1	Human	Goat IgG	AF2636	100 µg
	Mouse	Goat IgG	AF2644	100 µg
❖ GASP-2/WFIKKN	Human	Goat IgG	AF2136	100 µg
■ GATA-3	Human	Goat IgG	AF2605	100 µg
■ GATA-4	Human	Goat IgG	AF2606	100 µg
◆ GDF-8 (propeptide)	Mouse	Sheep IgG	AF1539	100 µg
■ GFRα-3	Mouse	Goat IgG	AF2645	100 µg
● GITR Ligand/TNFSF18	Mouse	Goat IgG	AF2177	100 µg
■ Glypican 2	Mouse	Goat IgG	AF2355	100 µg
■ Glypican 5	Human	Goat IgG	AF2607	100 µg
■ HAPLN1	Human	Goat IgG	AF2608	100 µg
■ Phospho-HGF R/c-MET (Y1234/Y1235)	Human	Rabbit IgG	AF2480	50 µg
■ HSP10/EPF	Mouse	Goat IgG	AF2584	100 µg
● HVEM/TNFRSF14	Mouse	Goat IgG	AF2516	100 µg
⊕ IFN-γ	Equine	Goat IgG	AF1586	100 µg
■ IKKγ	Human/Mouse/Rat	Goat IgG	AF2684	100 µg
■ IL-1F6/FIL1ε	Mouse	Goat IgG	AF2297	100 µg
■ IL-1F8/FIL1η	Mouse	Goat IgG	AF2298	100 µg

Continued on page 4.

GATA Family

R&D Systems now offers a collection of antibodies for the analysis of GATA family proteins. GATA factors comprise a family of zinc finger, transcription-activating proteins that interact with conserved WGATAR (W = T or A; R = G or A) DNA motifs to modulate the activity of target gene regulatory elements. GATA proteins are expressed at various stages during development and play a prominent role in gating the initiation of lineage differentiation.

Available Antibodies

ANALYTE	SPECIES
GATA-1	Human, Mouse
GATA-2	Human
GATA-3	Human, Mouse
GATA-4	Human
GATA-5	Human
GATA-6	Human

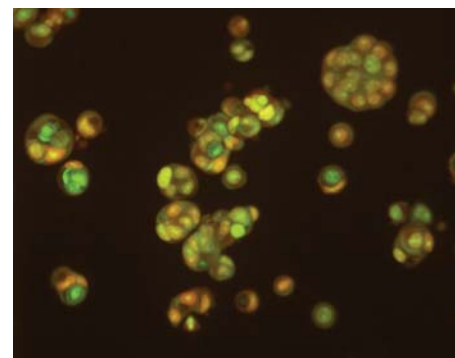


FIGURE 1. Detection of GATA-3 in human MCF-7 cells using R&D Systems goat anti-human GATA-3 affinity-purified polyclonal antibody (Catalog # AF2605). Cells were stained using a Rhodamine Red-conjugated donkey anti-goat IgG secondary antibody (red) and counterstained using Fluoro Nissl (green).

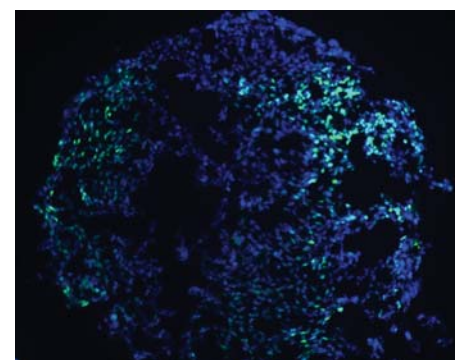


FIGURE 2. Detection of GATA-4 in serum-induced embryoid body section using R&D Systems goat anti-human GATA-4 affinity-purified polyclonal antibody (Catalog # AF2606). Sections were stained using anti-goat IgG secondary antibody (green) and counterstained with DAPI (blue). [Note: Image courtesy of Dr. Frank Solder, NINDS, NIH.]

Phospho-AMPK α 1/2

AMP-activated protein kinase (AMPK) is a heterotrimeric complex consisting of a catalytic α subunit and regulatory β and γ subunits. Each subunit exists as alternate isoforms (α 1, α 2, β 1, β 2, γ 1, γ 2, γ 3), with all 12 heterotrimeric combinations possible.¹ The catalytic α subunit of AMPK is activated allosterically by AMP, and by phosphorylation via the AMPK kinase LKB1.² Functioning as a cellular fuel gauge, active AMPK switches off ATP consumption by downregulating anabolic pathways and switches on ATP production by upregulating catabolic pathways.³

AMPK's role in metabolic regulation has implicated this serine/threonine kinase as a therapeutic target in heart disease, obesity, and diabetes. Metformin is a widely prescribed oral drug for the treatment of type 2 diabetes, decreasing hepatic glucose production, increasing hepatic fatty acid oxidation, and increasing glucose uptake in skeletal muscle.⁴ Recent studies have indicated metformin acts via AMPK. For example, expression of constitutively active AMPK α mimics, while kinase-inactive AMPK α abrogates, the therapeutic effects of this drug.⁵ Metformin treatment stimulates the phosphorylation of AMPK α 1 at T174 and α 2 at T172, sites within the activation loop critical for kinase activity.⁶

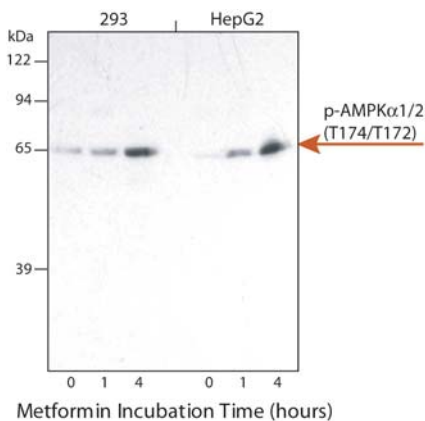


FIGURE 1. Metformin stimulates the phosphorylation of AMPK α 1 and α 2 at T174 and T172. Human 293 and HepG2 cells were incubated with 2 mM metformin for the indicated times. The resulting total cell lysates were immunoblotted with R&D Systems rabbit anti-phospho-AMPK α 1/2 (T174/T172) affinity purified polyclonal antibody (Catalog # AF2509).

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Polyclonal Antibodies

Antibody	Species	Type	Catalog #	Size
<i>Continued from page 3.</i>				
IL-2	Bovine	Goat IgG	AF2465	100 μ g
IL-3	Rat	Goat IgG	AF2524	100 μ g
IL-17D	Mouse	Goat IgG	AF2274	100 μ g
IL-17 RC	Mouse	Goat IgG	AF2270	100 μ g
Indian Hedgehog <i>N-Term</i>	Mouse	Goat IgG	AF1705	100 μ g
○ Integrin β1/CD29	Mouse	Goat IgG	AF2405	100 μ g
	Mouse	Goat IgG	AF2618	100 μ g
○ Kirrel2	Human	Sheep IgG	AF2564	100 μ g
Klotho β	Mouse	Goat IgG	AF2619	100 μ g
Kremen-1	Human	Goat IgG	AF2127	100 μ g
Kremen-2	Human	Goat IgG	AF1946	100 μ g
○ LAG-3	Human	Goat IgG	AF2319	100 μ g
LAIR1	Human	Goat IgG	AF2664	100 μ g
LAIR2	Human	Goat IgG	AF2665	100 μ g
LDL R	Human	Goat IgG	AF2148	100 μ g
❖ Legumain	Mouse	Sheep IgG	AF2058	100 μ g
LMIR5/CLM7	Mouse	Goat IgG	AF2580	100 μ g
❖ α2-Macroglobulin	Human	Goat IgG	AF1938	100 μ g
Mash1	Mouse	Goat IgG	AF2567	100 μ g
Mimecan	Human	Goat IgG	AF2660	100 μ g
○ Mindin	Human	Goat IgG	AF2609	100 μ g
Musashi-1	Human	Goat IgG	AF2628	100 μ g
Myocilin	Human	Goat IgG	AF2537	100 μ g
○ Nectin-4	Human	Goat IgG	AF2659	100 μ g
○ Nidogen-1	Human	Goat IgG	AF2570	100 μ g
Osteoactivin/GPNMB	Human	Goat IgG	AF2550	100 μ g
Osteocarin	Mouse	Sheep IgG	AF2620	100 μ g
Pax3	Human	Goat IgG	AF2457	100 μ g
Pax4	Human	Goat IgG	AF2614	100 μ g
■ Phospho-PDGF Rα (Y762)	Human	Rabbit IgG	AF21141	50 μ g
Pentraxin 2/SAP	Mouse	Sheep IgG	AF2558	100 μ g
Pentraxin 3/TSG-14	Mouse	Goat IgG	AF2166	100 μ g
Progranulin	Mouse	Sheep IgG	AF2557	100 μ g
SDNSF/MCFD2	Mouse	Goat IgG	AF2556	100 μ g
SLITRK2	Human	Goat IgG	AF2657	100 μ g
SLITRK5	Human	Goat IgG	AF2587	100 μ g
▲ Phospho-SMC1 (S966)	Human	Rabbit IgG	AF2677	50 μ g
■ SOX3	Human	Goat IgG	AF2569	100 μ g
❖ Spinesin <i>Ectodomain</i>	Mouse	Goat IgG	AF1928	100 μ g
■ Phospho-Src (Y419)	Human	Rabbit IgG	AF2685	100 μ g
ST7	Human	Sheep IgG	AF2560	100 μ g
Stella	Mouse	Goat IgG	AF2566	100 μ g
■ TC-PTP	Human/Mouse/Rat	Goat IgG	AF1930	100 μ g
TfR	Human	Goat IgG	AF2474	100 μ g
TLR2	Human	Goat IgG	AF2616	100 μ g
● TNF-α/TNFSF1A	Bovine	Goat IgG	AF2279	100 μ g
	Equine	Goat IgG	AF1814	100 μ g
TrkA	Rat	Goat IgG	AF1056	100 μ g
❖ Tryptase β-1/MCPT7	Mouse	Goat IgG	AF1937	100 μ g
❖ Tryptase ϵ/BSSP-4	Mouse	Goat IgG	AF2059	100 μ g
● TWEAK R/TNFRSF12	Human	Goat IgG	AF1199	100 μ g
	Mouse	Goat IgG	AF1610	100 μ g
VEGF	Canine	Goat IgG	AF1603	100 μ g

Monoclonal Antibodies

Antibody	Species	Clone	Catalog #	Size
❖ ADAMTS1	Human	268104	MAB2197	100 µg
❖ Adiponectin/Acrp30	Human	166128	MAB1065	500 µg
	Human/Mouse	251321	MAB11192	500 µg
○ AMIGO2	Human	273617	MAB2080	100 µg
❖ Azurocidin/CAP37/HBP	Human	246322	MAB2200	500 µg
❖ BLAME/SLAMF8	Human	250022	MAB19071	100 µg
▲ BRCA2	Human	234403	MAB2476	100 µg
■ c-Rel	Mouse	290512	MAB2699	100 µg
❖ C1q R1/CD93	Human	273107	MAB23791	100 µg
❖ Complement Component C1r	Human	269104	MAB1807	100 µg
❖ Complement Component C2	Human	269716	MAB1936	100 µg
❖ Cathepsin 3	Mouse	264013	MAB2638	500 µg
❖ Cathepsin B	Human	155714	MAB2176	500 µg
❖ Cathepsin S	Human	248718	MAB1183	500 µg
◆ CCL14/HCC-1/HCC-3	Human	256413	MAB324	500 µg
	Human	256409	MAB3241	500 µg
◆ CCR9	Human	248621	MAB1791	500 µg
○ CD36/SR-B3	Human	255619	MAB1955	100 µg
○ CD229/SLAMF3	Human	249936	MAB1898	500 µg
Chordin-Like 1	Human	263737	MAB1808	100 µg
Chordin-Like 2	Human	272919	MAB2448	100 µg
Common γ Chain/IL-2 Rγ	Human	31134	MAB2841	500 µg
CRTAM	Human	210213	MAB16951	500 µg
◆ CXCL8/IL-8	Canine	258911	MAB1608	100 µg
○ Dectin-1/CLECSF12	Human	259931	MAB1859	100 µg
Dkk-1	Mouse	259631	MAB1765	100 µg
❖ DPP6	Human	274308	MAB2360	100 µg
EGF	Mouse	262930	MAB2028	500 µg
EZFIT	Human	K9716	2ZK9716H	100 µg
● Fas Ligand/TNFSF6	Rat	252029	MAB1858	500 µg
FGF-23	Human	275802	MAB2604	100 µg
	Human/Mouse	283511	MAB2629	100 µg
	Mouse	283507	MAB26291	100 µg
○ Fibronectin	Human	P1H11	MAB1918	100 µg
■ GATA-3	Human/Mouse	291119	MAB2605	100 µg
GFAP	Human	273807	MAB2594	100 µg
■ GSK-3β	Human	272535	MAB25061	100 µg
◆ HCR/CRAM-A/B	Human	152254	MAB23501	500 µg
❖ HPRG	Mouse	242425	MAB1905	500 µg
+ IFN-β	Mouse	RMMB-1	22400-1	250 µg
IL-6 R	Mouse	255820	MAB18301	100 µg
	Mouse	255821	MAB1830	500 µg
+ IL-10	Porcine	262715	MAB6932	100 µg
+ IL-20 Rα	Human	173714	MAB11762	500 µg
IL-23	Human	253810	MAB1290	500 µg
+ IL-24	Human	283123	MAB19651	100 µg
+ IL-28/IFN-λ	Mouse	244710	MAB1789	500 µg
+ IL-29/IFN-λ1	Human	247801	MAB15981	500 µg
○ Integrin α4/CD49d	Mouse	265318	MAB24501	100 µg
○ Integrin αV β5	Human	P5H9	MAB2528	100 µg
○ Integrin β1/CD29	Human	P5D2	MAB17781	100 µg
	Human	P4G11	MAB17782	100 µg
❖ Kallikrein 3/PSA	Human	181827	MAB13441	500 µg
❖ Kallikrein 5	Human	193316	MAB11081	100 µg

Continued on page 6.

Human Tissue Kallikreins

Human tissue kallikreins (hKLKs) are a homologous group of secreted serine proteases found in many tissues and biological fluids. A 360 kb gene cluster on chromosome 19q13.3-4 encodes the 15 known hKLKs (hKLK1 through hKLK15), and represents the largest protease locus in the human genome. Similar to other serine proteases, the hKLKs are 25-45 kDa proteins consisting of a signal peptide, pro sequence, and mature polypeptide chain with trypsin- or chymotrypsin-like enzymatic activities.¹ The hKLKs were characterized initially as cancer biomarkers. The most notable example is hKLK3, also known as prostate specific antigen (PSA), which is currently the best known biomarker for prostate cancer. Further studies have demonstrated that the hKLKs also actively participate in a wide variety of physiological processes and are implicated in the pathogenesis of several diseases.²

As members of the hKLK family, hKLK7, hKLK13, and hKLK14 are differentially expressed in cancers of the lung, breast, and ovary and thus may serve as diagnostic or prognostic biomarkers for these diseases.³⁻⁵ The major physiological function of hKLK7 is to regulate the desquamation process by cleaving the intercellular adhesive structures between corneocytes and as a result, it is related to some inflammatory skin diseases, such as psoriasis.^{6,7} hKLK13 and hKLK14, as suggested by recent studies, may contribute to tumor metastasis through proteolytic processing of extracellular matrix components.^{8,9}

R&D Systems now offers recombinant hKLK7, hKLK13 and hKLK14. These proteases are produced as zymogens in the murine myeloma cell line, NS0, and can be activated by lysyl-endopeptidase or thermolysin. Corresponding synthetic fluorogenic peptide substrates as well as serine protease inhibitors are also available.

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Lipocalin-2

Lipocalin family members are small molecule transporters that share a highly conserved eight-stranded, anti-parallel β barrel structure.¹ Lipocalin-2, also known as neutrophil gelatinase-associated lipocalin (NGAL), is a 25 kDa protein expressed as a monomer, a homodimer, and a heterodimer with MMP-9,² and its expression is upregulated in epithelial cells during inflammation.³ Lipocalin-2 has been implicated in a variety of processes including cell differentiation, tumorigenesis, and apoptosis.³⁻⁵ Recent studies indicate that Lipocalin-2 binds a bacterial catecholate siderophore bound to ferric ion such as enterobactin.⁶ The bound ferric enterobactin complex breaks down slowly to dihydroxybenzoyl serine and dihydroxybenzoic acid (DHBA). Lipocalin-2 also binds a ferric DHBA complex, but with lower affinity.⁶ Lipocalin-2 is secreted by immune cells in response to Toll-like receptor activation and acts as a potent bacteriostatic agent by sequestering iron.⁷ Lipocalin-2 can also alter the invasive and metastatic behavior of Ras-transformed breast cancer cells *in vitro* and *in vivo* by reversing Ras-induced epithelial to mesenchymal transition.⁸

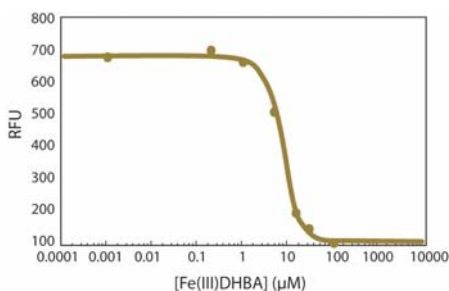


FIGURE 1. Titration of R&D Systems recombinant human Lipocalin-2 (Catalog # 1757-LC) with Fe(III)DHBA. Binding of Fe(III)DHBA to Lipocalin-2 (2.0 μ M) results in quenching of Trp fluorescence measured at 280/340 nm (Ex/Em).

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Monoclonal Antibodies

Antibody	Species	Clone	Catalog #	Size
<i>Continued from page 5.</i>				
❖ Kallikrein 6/Neurosin	Human	265508	MAB2008	100 μ g
○ Laminin-1	Mouse	AL-2	MAB2549	100 μ g
● LIGHT/TNFSF14	Mouse	261639	MAB1794	100 μ g
● Lipocalin-2/NGAL	Human	220322	MAB17571	500 μ g
	Mouse	228418	MAB1857	500 μ g
● LMIR6/IREM-2	Human	233810	MAB2705	100 μ g
● Lysyl Oxidase Homolog 2	Human	262418	MAB2639	100 μ g
❖ α2-Macroglobulin	Human	257316	MAB1938	500 μ g
○ MDL-1/CLECSF5	Human	283834	MAB2384	100 μ g
■ MKK3	Human/Mouse/Rat	275909	MAB2515	100 μ g
■ MKK3/MKK6	Human/Mouse/Rat	275922	MAB2514	100 μ g
■ Musashi-1	Human	282613	MAB2628	100 μ g
● Neuropilin-2	Human	257107	MAB2215*	100 μ g
● NF-L	Human	268014	MAB2216	100 μ g
■ NFKB1	Human/Mouse	285412	MAB2697	100 μ g
● NG2/MCSP	Human	LMH-2	MAB2585	100 μ g
● NKp44	Human	253415	MAB22491	100 μ g
■ NKX2.5	Human	259416	MAB2444	100 μ g
● Nope	Mouse	261123	MAB1394	100 μ g
■ PI 3-kinase p110β	Human	269020	MAB2686	100 μ g
■ PI 3-kinase p110δ	Human	275144	MAB2687	100 μ g
▲ p27/Kip1	Human/Mouse/Rat	225501	MAB2256	100 μ g
❖ PCPE	Human	261730	MAB2627	100 μ g
● Pentraxin 3/TSG-14	Human	PPJ0069	2ZPPJ0069H	100 μ g
	Mouse	265629	MAB2166	100 μ g
❖ Plasminogen/Plasmin	Human	270412	MAB2596	100 μ g
❖ Plasminogen	Human	270409	MAB1939	100 μ g
● PLUNC	Human	251512	MAB1897	100 μ g
■ PTPβ/ζ	Human	279244	MAB2688	100 μ g
■ PTP-MEG2	Human/Mouse/Rat	291835	MAB2668	100 μ g
● RGM-A	Human/Mouse/Chicken	275407	MAB2458	100 μ g
● SALL1	Human	K9814	2ZK9814H	100 μ g
● Semaphorin 6D	Human	257510	MAB2095	100 μ g
❖ Serpin A5	Mouse	258712	MAB2234	500 μ g
■ SHP-1	Human	255402	MAB1878	100 μ g
○ Siglec-2/CD22	Human	219934	MAB1968	100 μ g
○ Siglec-10	Human	265817	MAB2130	100 μ g
■ Smad5	Human/Mouse	268212	MAB2250	100 μ g
■ SOX3	Human	287403	MAB2569	100 μ g
❖ Spinesin Ectodomain	Mouse	282324	MAB1928	100 μ g
● Stella	Human/Mouse	283910	MAB2566	100 μ g
● TfR	Human	29806	MAB2474	500 μ g
● TNF-α/TNFSF1A	Mouse	MP6-XT22	MAB4101	100 μ g
● TRAIL R2/TNFRSF10B	Mouse	118908	MAB15401	500 μ g
❖ Trappin-2/Elafin	Human	257729	MAB1747	500 μ g
● TREML1/TLT-1	Mouse	268529	MAB2424	100 μ g
● VEGF-B 167	Mouse	128313	MAB2595	100 μ g
● Vimentin	Human	280618	MAB2105	100 μ g
● Wnt-10b	Mouse	254206	MAB2110	100 μ g

Antibody Control

Antibody	Species	Label	Catalog #	Size
IgG _{2A} Isotype Control	Mouse	Biotin	C003B	50 μ g

Labeled Antibodies

Biotinylated Antibodies

Antibody	Species	Type	Catalog #	Size
● 4-1BB Ligand/TNFSF9	Human	Goat IgG	BAF2295	50 µg
A2B5	Human/Mouse/ Rat/Chicken	Mouse IgM	BAM1416	100 µg
❖ ADAM33 Ectodomain	Mouse	Goat IgG	BAF2434	50 µg
B7-H4	Mouse	Goat IgG	BAF2154	50 µg
○ BOC	Mouse	Goat IgG	BAF2385	50 µg
C1q R1/CD93	Human	Goat IgG	BAF2379	50 µg
○ E-Cadherin	Human	Goat IgG	BAF648	50 µg
○ VE-Cadherin	Human	Mouse IgG2B	BAM9381	100 µg
Carbonic Anhydrase II	Human	Sheep IgG	BAF2184	50 µg
Carbonic Anhydrase XIII	Human	Goat IgG	BAF2194	50 µg
CD4	Canine	Goat IgG	BAF2410	50 µg
CD69	Mouse	Goat IgG	BAF2386	50 µg
○ CD72	Mouse	Goat IgG	BAF1279	50 µg
○ CDO	Mouse	Goat IgG	BAF2429	50 µg
○ CHL-1/L1CAM-2	Human	Goat IgG	BAF2126	50 µg
○ Chondrolectin	Human	Goat IgG	BAF2576	50 µg
Chordin-Like 2	Human	Goat IgG	BAF2448	50 µg
❖ Complement Component C1s	Human	Sheep IgG	BAF2060	50 µg
❖ Complement Component C2	Human	Goat IgG	BAF1936	50 µg
❖ Corin Ectodomain	Human	Goat IgG	BAF2209	50 µg
CREG	Human	Goat IgG	BAF2380	50 µg
○ CRISP-3	Human	Goat IgG	BAF2397	50 µg
Crossveinless-2	Sheep	Goat IgG	BAF1956	50 µg
● DcTRAIL R1/TNFRSF23	Mouse	Goat IgG	BAF2378	50 µg
DDR1	Human	Goat IgG	BAF2396	50 µg
DDR2	Human	Goat IgG	BAF2538	50 µg
Dkk-2	Mouse	Goat IgG	BAF2435	50 µg
● DR3/TNFRSF25	Mouse	Goat IgG	BAF2437	50 µg
ECF-L	Mouse	Goat IgG	BAF2446	50 µg
Endorepellin	Human	Goat IgG	BAF2364	50 µg
Epigen	Mouse	Goat IgG	BAF1127**	50 µg
Epimorphin	Mouse	Goat IgG	BAF2568	50 µg
Exostosin-like 2	Mouse	Goat IgG	BAF2536	50 µg
FABP4	Mouse	Goat IgG	BAF1443	50 µg
● Fas/TNFRSF6	Rat	Goat IgG	BAF2159	50 µg
Fcγ RI/CD64	Human	Goat IgG	BAF1257	50 µg
	Mouse	Goat IgG	BAF2074	50 µg
FcRH4/IRTA1	Human	Goat IgG	BAF2426	50 µg
FGF-12	Human	Goat IgG	BAF2246	50 µg
FGF-16	Human	Sheep IgG	BAF1212	50 µg
FGF-21	Human	Goat IgG	BAF2539	50 µg
○ Ficolin-2	Human	Goat IgG	BAF2428	50 µg
○ Ficolin-3	Human	Goat IgG	BAF2367	50 µg
■ FosB/GOS3	Human	Goat IgG	BAF2214	50 µg
○ Galectin-4	Mouse	Goat IgG	BAF2128	50 µg
❖ GASP-1	Human	Goat IgG	BAF2070	50 µg
❖ GASP-2/WFIKKN	Human	Goat IgG	BAF2136	50 µg
■ GATA-3	Human	Goat IgG	BAF2605	50 µg
■ GATA-4	Human	Goat IgG	BAF2606	50 µg

Continued on page 8.

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FGF-23

FGF-23 is the largest member of the fibroblast growth factor (FGF) family, and it shares less than 25% sequence identity with the most closely related FGF family members, FGF-21 and FGF-19.¹ It is a secreted protein synthesized as a 251 amino acid (aa) precursor with a 24 aa signal peptide. Low level FGF-23 expression was detected in thymus and brain ventrolateral thalamic nucleus.¹

Inorganic phosphate reabsorption occurs in the renal proximal tubule and requires type IIa sodium/phosphate-cotransporter (NaPi-IIa).²⁻⁴ Active FGF-23 reduces expression of NaPi-IIa and inhibits reuptake of phosphate.^{3,4} Several clinically distinct disorders are caused by an aberrant gain of function for FGF-23 leading to hypophosphatemia (abnormally low phosphate levels in blood) and the resulting conditions, osteomalacia (defective bone mineralization) or rickets (defective cartilage mineralization).⁵ Autosomal dominant hypophosphatemic rickets (ADHR) is caused by mutation of one of two closely spaced arginine residues of FGF-23 (R176 and R179).⁶ These residues are near a protease processing site (R179/S180) that is cleaved by the membrane-associated metalloprotease, PHEX, leading to inactivation of FGF-23.^{7,8} Mutant forms of the protein are resistant to proteolytic cleavage, resulting in overly active FGF-23 signaling. Oncogenic osteomalacia (OOM) is caused by a variety of rare benign mesenchymal tumors.⁵ Tumors that cause OOM express high levels of FGF-23 in contrast to barely detectable levels in normal tissues.⁹ The condition can be cured by removal of the responsible tumor. X-linked hypophosphatemia (XLH) is the most common inherited disorder of renal phosphate transport. It is caused by mutations that inactivate PHEX,¹⁰ leaving it incapable of cleaving FGF-23.⁷ This causes an accumulation of active FGF-23 and the consequent hypophosphatemia.

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HGF R/c-MET DuoSet IC ELISA

Human growth factor receptor (HGF R), a product of the proto-oncogene c-MET, is a receptor tyrosine kinase that exists as a disulfide-linked α and β chain heterodimer.¹ Upon ligand binding, HGF R forms a tetrameric complex ($\alpha_2\beta_2$) that autophosphorylates, upregulates its kinase activity, generates SH2 docking sites for adapter proteins, and stimulates the Ras pathway.¹ HGF R is expressed primarily on epithelial cells,² where it has key roles in proliferation, survival, motility, invasion,³ and carcinogenesis.⁴ R&D Systems now offers both Human Phospho-HGF R and Total HGF R DuoSet IC ELISAs.

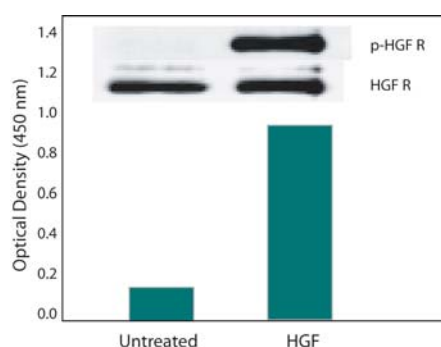


FIGURE 1. A431 cells were untreated or treated with 100 ng/mL recombinant human HGF (Catalog # 294-HGN) for five minutes and lysates were assayed using R&D Systems Human Phospho-HGF R DuoSet IC ELISA (Catalog # DYC2480). The same lysates were assayed by IP-Western blot (inset) using an anti-HGF R antibody for IP and a biotinylated pan anti-phospho-tyrosine antibody (Catalog # BAM1676) or a biotinylated anti-HGF R antibody (Catalog # BAF358) for immunoblotting.

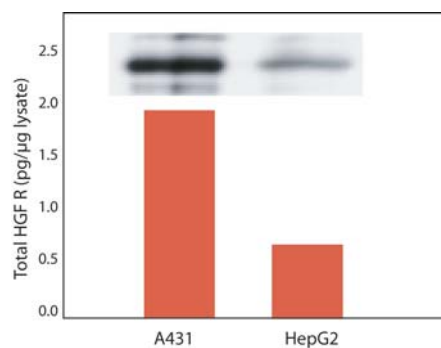


FIGURE 2. Lysates prepared from A431 and HepG2 cells were assayed using the R&D Systems Human Total HGF R DuoSet IC ELISA (Catalog # DYC358). The same lysates were tested by IP-Western blot (inset) using an anti-HGF R antibody and a biotinylated anti-HGF R antibody (Catalog # BAF358).

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4. Maulik, G. *et al.* (2002) *Clin. Cancer Res.* **8**:620.

For research use only. Not for use in diagnostic procedures.

Labeled Antibodies

Biotinylated Antibodies

Antibody	Species	Type	Catalog #	Size
<i>Continued from page 7.</i>				
● GITR Ligand/TNFSF18	Mouse	Goat IgG	BAF2177	50 µg
■ Glypican 2	Human	Goat IgG	BAF2304	50 µg
	Mouse	Goat IgG	BAF2355	50 µg
■ Glypican 6	Mouse	Goat IgG	BAF1053	50 µg
■ HNF-3β	Human	Goat IgG	BAF2400	50 µg
● IL-1F6/FIL1ε	Mouse	Goat IgG	BAF2297	50 µg
● IL-1F8/FIL1η	Mouse	Goat IgG	BAF2298	50 µg
● IL-1F9/IL-1 H1	Human	Goat IgG	BAF2320	50 µg
● IL-1F10/IL-1HY2	Human	Goat IgG	BAF2427	50 µg
● IL-2 Rα	Mouse	Goat IgG	BAF2438	50 µg
● IL-17F	Mouse	Goat IgG	BAF2057	50 µg
● IL-18 BpC	Mouse	Goat IgG	BAF129	50 µg
● ILT3/CD85k	Human	Goat IgG	BAF2425	50 µg
○ Integrin β6	Mouse	Goat IgG	BAF2389	50 µg
● Jagged 1	Human	Goat IgG	BAF1277	50 µg
◆ α2-Macroglobulin	Human	Goat IgG	BAF1938	50 µg
■ Mash1	Mouse	Goat IgG	BAF2567	50 µg
○ MBL	Human	Goat IgG	BAF2307	50 µg
○ MDL-1/CLECSF5	Human	Goat IgG	BAF2384	50 µg
● MOG	Mouse	Goat IgG	BAF2439	50 µg
● Myocilin	Human	Goat IgG	BAF2537	50 µg
● Netrin-4	Mouse	Goat IgG	BAF1132*	50 µg
○ NKG2D	Mouse	Rat IgG2B	BAM1547	100 µg
● NKp46/NCR1	Mouse	Goat IgG	BAF2225	50 µg
■ NKX2.5	Human	Goat IgG	BAF2444	50 µg
● NRG1 Isoform GGF2	Human	Goat IgG	BAF2015	50 µg
● PD-ECGF	Human	Goat IgG	BAF1143	50 µg
● PDGF-C	Mouse	Goat IgG	BAF1447	50 µg
■ PDX-1	Human	Goat IgG	BAF2419	50 µg
● PRDC	Mouse	Goat IgG	BAF2069	50 µg
● Progranulin	Human	Goat IgG	BAF2420	50 µg
● Resistin	Human	Goat IgG	BAF1359	50 µg
● RGM-A	Human	Goat IgG	BAF2459	50 µg
	Mouse	Goat IgG	BAF2458	50 µg
● S100A10	Mouse	Goat IgG	BAF2377	50 µg
● SDNSF/MCFD2	Human	Goat IgG	BAF2357	50 µg
● SLITRK5	Human	Goat IgG	BAF2587	50 µg
■ Smad1	Human	Goat IgG	BAF2039	50 µg
● Thrombopoietin R	Human	Goat IgG	BAF1016	50 µg
○ Thrombospondin-4	Human	Goat IgG	BAF2390	50 µg
	Mouse	Goat IgG	BAF2424	50 µg
● TREML1/TLT-1	Human	Goat IgG	BAF2394	50 µg
◆ Tryptase β-1	Mouse	Goat IgG	BAF1937	50 µg
● TSG-6	Mouse	Goat IgG	BAF2326	50 µg
◆ TSP50	Human	Goat IgG	BAF2430	50 µg
● Vasorin	Human	Goat IgG	BAF2140	50 µg
◆ XIAP	Human	Goat IgG	BAF8221	50 µg

*This product is covered under one or more patents owned by the Regents of the University of California.

● TNF Superfamily
◆ Chemokines & Receptors

■ Signal Transduction
▲ DNA Damage & Repair

○ Adhesion Molecules/Lectins
◆ TGF-β Superfamily Ligands

■ IL-10/Interferon Family
◆ Proteases & Inhibitors

Labeled Antibodies

Fluorochrome-labeled Antibodies

Antibody	Species	Label	Catalog #	Size
◆ CCL3/MIP-1 α	Human	APC	IC2701A	100 Tests
	Human	Fluorescein	IC2701F	100 Tests
	Human	PE	IC2701P	100 Tests
CD8 α	Human	PE	FAB1509P	100 Tests
● CD30 Ligand/TNFSF8	Human	APC	FAB1028A	100 Tests
	Human	PE	FAB1028P	100 Tests
CD38	Human	Fluorescein	FAB2404F	100 Tests
	Human	PE	FAB2404P	100 Tests
CD83	Human	APC	FAB1774A	100 Tests
	Human	Fluorescein	FAB1774F	100 Tests
	Human	PE	FAB1774P	100 Tests
◆ CXCL9/MIG	Human	APC	IC392A	100 Tests
	Human	Fluorescein	IC392F	100 Tests
	Human	PE	IC392P	100 Tests
○ DCIR/CLECSF6	Human	APC	FAB1748A	100 Tests
	Human	Fluorescein	FAB1748F	100 Tests
	Human	PE	FAB1748P	100 Tests
ErbB2	Human	APC	FAB1129A	100 Tests
	Human	PE	FAB1129P	100 Tests
IL-2 R β	Human	APC	FAB224A	100 Tests
	Human	Fluorescein	FAB224F	100 Tests
	Human	PE	FAB224P	100 Tests
IL-3	Human	APC	IC603A	100 Tests
	Human	Fluorescein	IC603F	100 Tests
	Human	PE	IC603P	100 Tests
○ Integrin α 5/CD49e	Human	APC	FAB1864A	100 Tests
○ Integrin α M/CD11b	Human	APC	FAB16991A	100 Tests
	Human	PE	FAB16991P	100 Tests
○ JAM-C	Human	APC	FAB11891A	100 Tests
	Human	PE	FAB11891P	100 Tests
KIR/CD158	Human	APC	FAB1848A	100 Tests
	Human	Fluorescein	FAB1848F	100 Tests
	Human	PE	FAB1848P	100 Tests
KIR2DL1	Human	APC	FAB1844A	100 Tests
	Human	Fluorescein	FAB1844F	100 Tests
	Human	PE	FAB1844P	100 Tests
KIR2DL3	Human	APC	FAB2014A	100 Tests
	Human	Fluorescein	FAB2014F	100 Tests
	Human	PE	FAB2014P	100 Tests
KIR3DL1	Human	APC	FAB12251A	100 Tests
	Human	Fluorescein	FAB12251F	100 Tests
	Human	PE	FAB12251P	100 Tests
● LIGHT/TNFSF14	Human	APC	FAB664A	100 Tests
	Human	PE	FAB664P	100 Tests
MICA	Human	APC	FAB1300A	100 Tests
	Human	PE	FAB1300P	100 Tests
❖ MMP-8	Human	Fluorescein	IC9081F	100 Tests
	Human	PE	IC9081P	100 Tests
NKG2C	Human	APC	FAB138A	100 Tests
NKp46/NCR1	Human	APC	FAB1850A	100 Tests
	Human	Fluorescein	FAB1850F	100 Tests
■ Oct-3/4	Human/Mouse	PE	IC1759P	100 Tests
	Rae-1	Mouse	APC	FAB17582A
	Mouse	Fluorescein	FAB17582F	100 Tests
○ Siglec-2/CD22	Human	Fluorescein	FAB1968F	100 Tests
	Human	PE	FAB1968P	100 Tests
○ SPARC	Human	PE	IC941P	100 Tests
TER-119	Mouse	APC	FAB1125A	100 Tests
TIM-3	Mouse	APC	FAB1529A	100 Tests
	Mouse	PE	FAB1529P	100 Tests

Stem Cell Marker Antibodies

Analysis of stem cell populations using stem cell marker antibodies in flow cytometry applications facilitates their specific identification, characterization, and quantitative assessment of differentiation. R&D Systems now offers a collection of transcription factor/cell lineage marker antibodies that are directly fluorochrome conjugated and validated for intracellular flow cytometry.

ANALYTE	SPECIES
Nestin	Human
Oct-3/4	Human, Mouse
α -Smooth Muscle Actin	Human
SOX2	Human

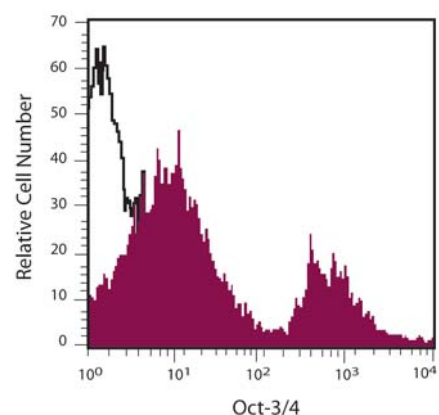


FIGURE 1. Mouse embryonic stem cells were treated with 5 μ M retinoic acid for 3 days to induce differentiation. Cells were then stained intracellularly using R&D Systems PE-conjugated mouse anti-human/mouse Oct-3/4 monoclonal antibody (Catalog # IC1759P; red) or using an isotype control (Catalog # IC013P; black).

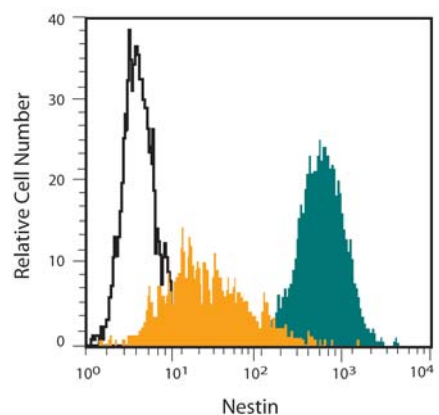


FIGURE 2. Human embryonic carcinoma NTERA-2 cells were treated (orange) or untreated (green) with 5 μ M retinoic acid for 60 days to induce differentiation. Cells were then stained intracellularly using R&D Systems PE-conjugated mouse anti-human Nestin monoclonal antibody (Catalog # IC1259P). Control staining is shown in black.

Phospho-GSK-3 α / β (S21/S9) DuoSet IC ELISA

Glycogen synthase kinase 3 (GSK-3) is a serine/threonine kinase first identified as an inactivator of glycogen synthase. GSK-3 acts as a multifunctional downstream switch that determines the output of numerous signaling pathways. There are two mammalian GSK-3 isoforms encoded by distinct genes, GSK-3 α and GSK-3 β ,¹ which are structurally similar, but functionally non-identical.² Dysregulated GSK-3 has been implicated in several diseases including type II diabetes,³ Alzheimer's disease,⁴ bipolar disorder,⁵ and cancer.⁶

Akt and other kinases phosphorylate GSK-3 α at S21 and GSK-3 β at S9, inhibiting GSK-3 activity.⁷ This inhibition causes dephosphorylation of various GSK-3 substrates, resulting in their functional activation. For example, in the Wnt pathway, the inactivating phosphorylation of GSK-3 inhibits the phosphorylation of β -Catenin, a transcriptional transactivator. While phosphorylated β -Catenin is targeted for ubiquitinylation, unphosphorylated β -Catenin escapes proteasomal degradation, accumulates in the cytoplasm, and translocates to the nucleus.⁸ Nuclear β -Catenin activates the TCF/LEF family of transcription factors, inducing the transcription of pro-mitotic genes.⁹

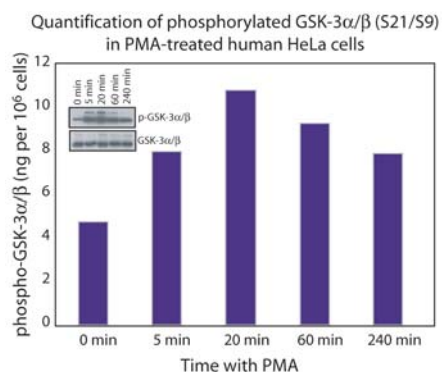


FIGURE 1. HeLa cells were stimulated with 200 nM PMA for the indicated times to induce phosphorylation of GSK-3 α / β . GSK-3 α / β phosphorylation was quantified in lysates using R&D Systems phospho-GSK-3 α / β (S21/S9) DuoSet IC ELISA (Catalog # DYC2630). Lysates were also immunoblotted (inset) with either anti-phospho-GSK-3 α / β (S21/S9) (Catalog # AF1590) or anti-GSK-3 α / β (Catalog # AF2157) polyclonal antibodies. Results using the DuoSet IC ELISA correlate well with amounts of phosphorylated GSK-3 α / β detected by Western blot.

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Matched Antibody Pairs

Antibody	Species	Use	Catalog #	Size
○ E-Cadherin	Human	Capture	MAB18382	500 μ g
	Human	Detection	BAF648	50 μ g
	Human	Protein	648-EC-100	100 μ g
❖ Cathepsin S	Human	Capture	AF1183	100 μ g
	Human	Detection	BAF1183	50 μ g
	Human	Protein	1183-CY-010	10 μ g
MICB	Human	Capture	MAB1599	500 μ g
	Human	Detection	BAF1599	50 μ g
	Human	Protein	1599-MB-050	50 μ g
● TNF-α/TNFSF1A	Canine	Capture	MAB1507	500 μ g
	Canine	Detection	BAF1507	50 μ g
	Canine	Protein	1507-CT-025	25 μ g

ELISpot Kits & Reagents

ELISpot Kits

Product	Species	Catalog #	Size
❖ MMP-7 (Total)	Human	EL907	1 Kit
❖ TIMP-1	Human	EL970	1 Kit

ELISpot Development Modules

Product	Species	Catalog #	Size
❖ Granzyme B	Mouse	SEL1865	1 Kit
❖ MMP-7 (Total)	Human	SEL907	1 Kit
❖ TIMP-1	Human	SEL970	1 Kit

Cell Selection Kits & Reagents

Product	Species	Catalog #	Size*
MagCollect Hematopoietic Cell Lineage Depletion Kit	Mouse	MAGM209	1 Kit
MagCollect Endoglin/CD105⁺ Cell Isolation Kit	Human	MAGH107	1 Kit

*Each kit processes up to 1x10⁹ cells.

ELISA & Activity Assay Development Kits

DuoSet® ELISA Development Systems

Product	Species	Catalog #	Reagents For*
○ Agtrin	Rat	DY550	15 Plates
Angiopoietin-1	Human	DY923	15 Plates
Dkk-1	Human	DY1906	15 Plates
Epiregulin	Mouse	DY1068	15 Plates
Erythropoietin R	Human	DY307	15 Plates
Fcγ RIIB/C (CD32b/c)	Human	DY1875	15 Plates
IL-6	Canine	DY1609	15 Plates
IL-17E	Mouse	DY1399	15 Plates
● TNF-α/TNFSF1A	Canine	DY1507	15 Plates
	Equine	DY1814	15 Plates
TSLP	Human	DY1398	15 Plates

*Also available in 45 plate Economy Packs.

DuoSet IC Intracellular ELISAs & Activity Assays

Product	Species	Catalog #	Reagents For*
■ Phospho-GSK-3α/β (S21/S9)	Human/Mouse/Rat	DYC2630-2	2 Plates
■ Phospho-HGF R/c-MET	Human	DYC2480-2	2 Plates
■ Total HGF R/c-MET	Human	DYC358-2	2 Plates
■ Phospho-PDGFRα	Human	DYC2114-2	2 Plates
■ Total PDGFRα	Human	DYC322-2	2 Plates
■ Phospho-RSK (S380) Pan Specific	Human/Mouse/Rat	DYC889-2	2 Plates
■ Active STAT6	Mouse	DYC2169-2	2 Plates

*Also available in 5 plate packs and 15 plate Economy Packs.

Supplemental DuoSet ELISA/Assay Development Products

Product	Catalog #	Size*
Black Polystyrene Microplates	DY991	1 Pack
Clear Polystyrene Microplates	DY990	1 Pack

*Each pack contains 25 microplates.

STAT6 DuoSet IC ELISA

STAT (signal transducer and activator of transcription) proteins, upon cytokine activation, translocate from the cytoplasm to the nucleus and initiate transcription. These transcription factors are involved in fundamental cell processes such as cell differentiation, proliferation, and apoptosis. STAT6 plays a role in T cell development by mediating the transcriptional response to IL-4 and IL-13 receptor activation. R&D Systems now offers a Mouse STAT6 DuoSet IC ELISA to measure activated STAT6 that is fast, simple, sensitive, and easily adapted to high throughput analysis (Figure 1).

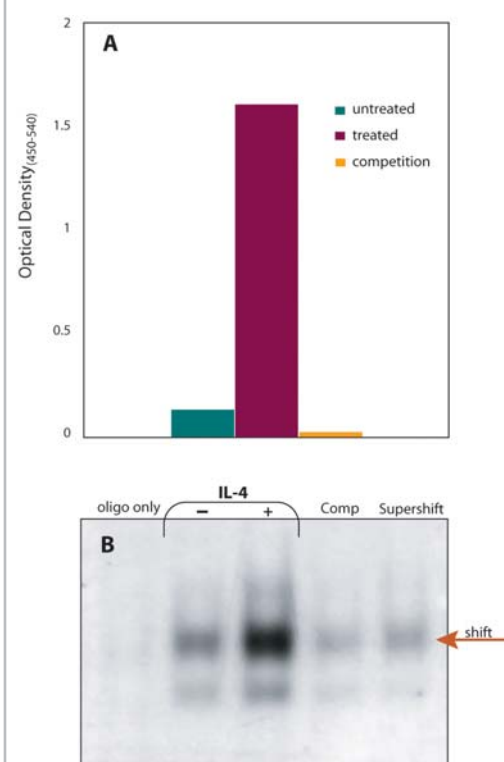


FIGURE 1. Activated STAT6 in IL-4-treated mouse Da3 cells. [A] Mouse Da3 cells were treated with 150 ng/mL R&D Systems recombinant mouse IL-4 (Catalog # 404-ML) for 30 minutes. Nuclear extracts were prepared and analyzed for STAT6 using R&D Systems Mouse Active STAT6 DuoSet IC ELISA (Catalog # DYC2169). [B] The same extracts were used for EMSA. The DuoSet IC ELISA results correlate well with traditional EMSA results. The specificity of the biotinylated wild-type double-stranded oligonucleotide is demonstrated by competition with the non-biotinylated form of this oligonucleotide. The specificity of the capture antibody is demonstrated by supershift in the EMSA.

Extracellular Matrix Protein Coated Plates

Extracellular matrix (ECM) is primarily made up of collagen, fibronectin, laminin, and vitronectin. These molecules interact with cells via cell surface integrin family receptors, facilitating the adhesion of cells to the ECM. The resulting focal adhesions or focal contacts are important for the maintenance of tissue architecture and for supporting a variety of cellular processes. ECM protein/integrin binding initiates a complex network of signal transduction cascades that, depending on the context, play an

important role in cell spreading, migration, proliferation, and differentiation during embryogenesis, wound healing, and tumor development.¹⁻³

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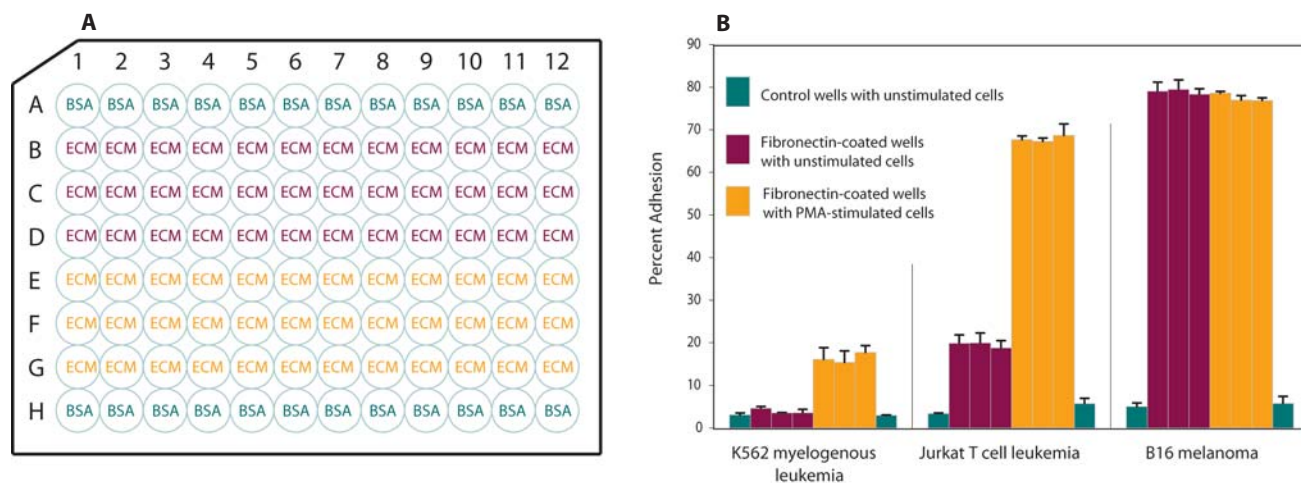


FIGURE 1. A. R&D Systems Extracellular Matrix (ECM) Protein Coated Plate assay template. As indicated by text in wells, rows A and H are left uncoated to serve as controls, and rows B through G are coated with ECM protein. The entire plate is then blocked with 1% Bovine Serum Albumin Fraction V (BSA). In this assay, cells were either unstimulated (burgundy) or stimulated (orange) with 10 ng/mL PMA for 30 minutes and applied to R&D Systems Human Fibronectin Coated Plates (Catalog # CWP001) in the pattern shown. **B.** Cells were labeled with calcein-AM and adhesion to the plates was measured as a percentage of total cells applied. All bars depict average and standard error values obtained from three plates.

Pre-coated Plates for Adhesion Assays

Product	Species	Catalog #	Size*
○ Fibronectin Coated 96-well microplates	Bovine	CWP002	1 Pack
	Human	CWP001	1 Pack
○ Vitronectin Coated 96-well microplates	Bovine	CWP004	1 Pack
	Human	CWP003	1 Pack

*Each pack contains 5 microplates.



R&D Systems
614 McKinley Place N.E.
Minneapolis, MN 55413
Tel: (612) 379-2956
(800) 343-7475
Fax: (612) 656-4400
www.RnDSystems.com

United Kingdom
R&D Systems Europe, Ltd.
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB
United Kingdom
Tel: +44 (0) 1235 529449
Fax: +44 (0) 1235 533420
info@RnDSystems.co.uk

Germany
R&D Systems GmbH
Borsigstraße 7
65205 Wiesbaden-Nordenstadt
Germany
Tel: +49 (0) 6122 90980
Fax: +49 (0) 6122 909819
info@RnDSystems.co.uk

France
R&D Systems Europe
77 boulevard Vauban
59041 LILLE CEDEX
France
Tel: 0800 90 72 49
Fax: 0800 77 16 68
info@RnDSystems.co.uk



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