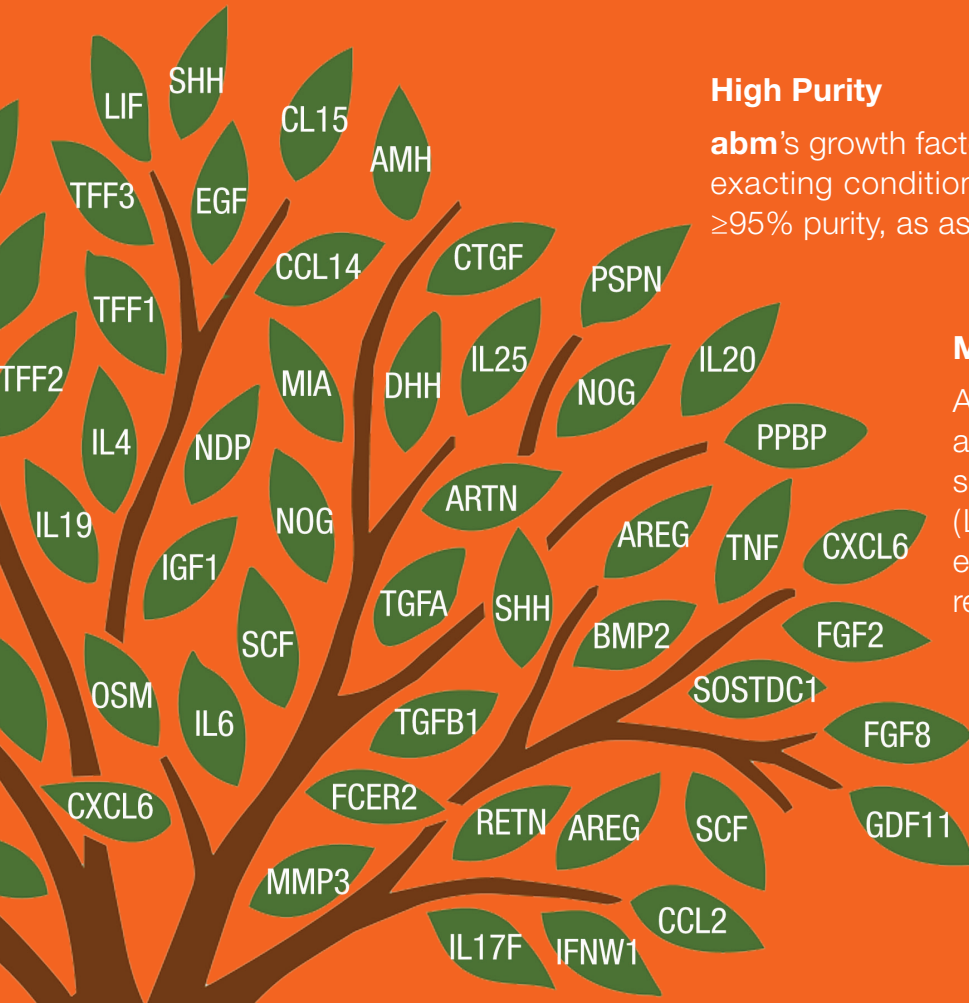


Growth Factors & Cytokines

Quality and Reliability shouldn't cost a fortune!

With **abm's** growth factors and cytokines, you can get the consistent quality your research demands at a price you can afford.



High Purity

abm's growth factors and cytokines are produced under exacting conditions that ensure consistent quality and ≥95% purity, as assessed by SDS-PAGE, on every lot.

Minimal Endotoxin

All of **abm's** growth factors and cytokines are tested for endotoxin levels by the standard Limulus Amebocyte Lysate (LAL) assay and guaranteed not to exceed the acceptable limit of 1 EU/μg recombinant protein.

Assured Biological Activity

Every lot of **abm's** growth factor/cytokine product is assayed to confirm biological activity at expected levels.

Flexible Aliquot Size and Option for Animal-Free Version

abm can custom-package growth factor/cytokine products to meet customer needs. In addition, **abm** can provide “animal-free” versions of all recombinant growth factor and cytokine products for particularly sensitive applications.



Growth Factors & Cytokines

Growth factors and cytokines are naturally occurring signalling molecules that are central to the crucial and complex network of cell to cell communication in higher organisms. These molecules play a vital role in determining the fate of all cellular processes by carrying regulatory messages between cells. While cytokines are mostly associated with immune system housekeeping, growth factors act to regulate a wide range of processes during both the developmental and mature stage of an organism. It is noteworthy that uncontrolled, 'rogue' activation of growth factor signalling is frequently associated with oncogenesis.

Considering their crucial roles, it is not surprising that growth factors/cytokines are indispensable to many aspects of research in cell biology. In traditional cell biology experiments, animal serum has often served as a rich, but heterogeneous, source of growth factors and nutrients required for normal cell metabolism. However, the use of animal serum is undesirable due to:

- Increased risk of viral, mycoplasma and prion contamination,
- High cost and ethical concerns associated with serum collection,
- Difficulty in accurate interpretation of experimental results in the context of non-standardized media with possible inclusion of growth inhibitors in the same.

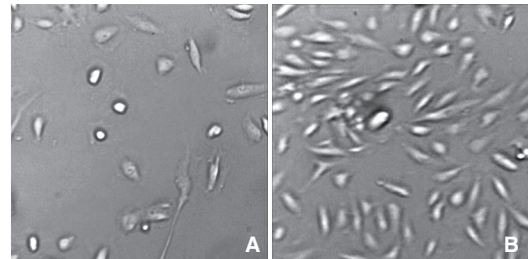


Figure: Increase in proliferation of Human Umbilical Vein Endothelial Cells (HUVEC) upon addition of VEGF: **(A)** Negative control **(B)** With addition of **abm's** Recombinant Human Vascular Endothelial Growth Factor (VEGF) 121AA (Cat No: ZP15693M) at the final concentration of 10ng/ml.

A switch from animal serum to recombinant growth factors is the logical choice for many types of research. **abm's** reliable, high quality products can help your laboratory make this switch.

Product List (made in *E.coli*)

| Product Name | Cat.No. | Product Name | Cat.No. | Product Name | Cat.No. |
|--|---------|--|---------|--|---------|
| Recombinant Human 4-1BB Receptor (TNFRSF9) | Z101085 | Recombinant Human CCL2 | Z100625 | Recombinant Human ENA-78 (CXCL5) | Z100165 |
| Recombinant Human 4-BBL (TNFSF9) | Z102255 | Recombinant Human CCL21 | Z100195 | Recombinant Human Eotaxin (CCL11) | Z100175 |
| Recombinant Human Activin A (INHBA) | Z101665 | Recombinant Human CCL22 | Z101015 | Recombinant Human Eotaxin-2 (CCL24) | Z100185 |
| Recombinant Human Adiponectin (Acrp30) | Z102595 | Recombinant Human CCL25 | Z101525 | Recombinant Human Eotaxin-3 (CCL26) | Z101575 |
| Recombinant Human AIMP1 | Z100155 | Recombinant Human CCL3 | Z100675 | Recombinant Human Epregrulin (EREG) | Z100995 |
| Recombinant Human AITRL (TNFSF18) | Z101725 | Recombinant Human CCL4 | Z100685 | Recombinant Human FGF1 | Z100005 |
| Recombinant Human AREG | Z101875 | Recombinant Human CD40 Ligand (CD40LG) | Z100125 | Recombinant Human FGF10 | Z100205 |
| Recombinant Human Artemin (ARTN) | Z102355 | Recombinant Human Chemerin | Z102205 | Recombinant Human FGF16 | Z102295 |
| Recombinant Human BAFF-R (TNFRSF13C) | Z100015 | Recombinant Human CNTF | Z100955 | Recombinant Human FGF17 | Z102305 |
| Recombinant Human BCA-1 (CXCL13) | Z100075 | Recombinant Human CTACK (CCL27) | Z101885 | Recombinant Human FGF18 | Z102315 |
| Recombinant Human B-cell Activating Factor (TNFSF13B) | Z100965 | Recombinant Human CTGF | Z102025 | Recombinant Human FGF19 | Z102325 |
| Recombinant Human B-cell Maturation Protein (TNFRSF17) | Z101445 | Recombinant Human CXCL1 | Z100285 | Recombinant Human FGF2 | Z101455 |
| Recombinant Human BDNF | Z100065 | Recombinant Human CXCL11 | Z100585 | Recombinant Human FGF20 | Z101715 |
| Recombinant Human Beta-Defensin 1 (DEFB1) | Z100025 | Recombinant Human CXCL12 (SDF-1 alpha) | Z101635 | Recombinant Human FGF21 | Z101105 |
| Recombinant Human Beta-Defensin 2 (DEFB4A) | Z100035 | Recombinant Human CXCL12 (SDF-1 beta) | Z101645 | Recombinant Human FGF23 | Z100985 |
| Recombinant Human Beta-Defensin 3 (DEFB103A) | Z100045 | Recombinant Human CXCL14 (BRAK) | Z102375 | Recombinant Human FGF3 | Z102285 |
| Recombinant Human Beta-Defensin 4 (DEFB104A) | Z100055 | Recombinant Human CXCL16 | Z102385 | Recombinant Human FGF4 | Z102605 |
| Recombinant Human BMP2 | Z100085 | Recombinant Human CXCL2 | Z100295 | Recombinant Human FGF6 | Z101685 |
| Recombinant Human BMP-3 beta (GDF10) | Z100095 | Recombinant Human CXCL4 (PF4) | Z101005 | Recombinant Human FGF8 | Z101705 |
| Recombinant Human BMP4 | Z100105 | Recombinant Human DAND5 | Z102135 | Recombinant Human FGF9 | Z100215 |
| Recombinant Human Cardiotrophin-1 (CT-1) | Z102365 | Recombinant Human DHH | Z101695 | Recombinant Human FLT3 Ligand (FLT3LG) | Z100225 |
| Recombinant Human CCL1 | Z101905 | Recombinant Human EGF | Z100135 | Recombinant Human Follistatin (FST) | Z101035 |

| Product Name | Cat.No. | Product Name | Cat.No. | Product Name | Cat.No. |
|--|---------|--|---------|---|---------|
| Recombinant Human Fractalkine (CX3CL1) | Z101895 | Recombinant Human IL31 | Z100525 | Recombinant Human OPG (TNFRSF11B) | Z101775 |
| Recombinant Human Galectin-1 (LGALS1) | Z101845 | Recombinant Human IL33 | Z100535 | Recombinant Human OSM | Z100755 |
| Recombinant Human Galectin-3 (LGALS3) | Z101825 | Recombinant Human IL36A | Z101865 | Recombinant Human PDGFA | Z100365 |
| Recombinant Human GCP-2 (CXCL6) | Z101805 | Recombinant Human IL36B | Z102465 | Recombinant Human PDGFB | Z100355 |
| Recombinant Human G-CSF (CSF3) | Z100245 | Recombinant Human IL36G | Z102215 | Recombinant Human PDGFC | Z101785 |
| Recombinant Human GDF3 | Z101735 | Recombinant Human IL37/IL23 | Z102085 | Recombinant Human Persephin (PSPN) | Z102495 |
| Recombinant Human GDNF | Z101055 | Recombinant Human IL4 | Z100545 | Recombinant Human PIGF | Z102615 |
| Recombinant Human GGF2 | Z101655 | Recombinant Human IL6 | Z100555 | Recombinant Human Prolactin (PRL) | Z102145 |
| Recombinant Human GH1 | Z100265 | Recombinant Human IL7 | Z100975 | Recombinant Human PTH | Z100775 |
| Recombinant Human GM-CSF (CSF2) | Z100275 | Recombinant Human IL8 (72aa) | Z101605 | Recombinant Human RANKL (TNFSF11) | Z102265 |
| Recombinant Human GMFB | Z101115 | Recombinant Human IL8 (77aa) | Z101615 | Recombinant Human RANTES (CCL5) | Z100785 |
| Recombinant Human GRO gamma (CXCL3) | Z101465 | Recombinant Human IL9 | Z102475 | Recombinant Human Resistin (RETN) | Z100805 |
| Recombinant Human HB-EGF (Heparin Binding EGF) | Z102155 | Recombinant Human IP-10 (CXCL10) | Z100575 | Recombinant Human Resistin-like beta (RETNLB) | Z101955 |
| Recombinant Human HCC-1 (CCL14) | Z100305 | Recombinant Human KGF (FGF7) | Z100595 | Recombinant Human S100A13 | Z102195 |
| Recombinant Human HCC-2 (CCL15) | Z100315 | Recombinant Human LEC (CCL16) | Z100325 | Recombinant Human S100A4 | Z101505 |
| Recombinant Human IFNA1 (IFN-alpha1) | Z102395 | Recombinant Human Leptin (LEP) | Z101855 | Recombinant Human sCD23 (FCER2) | Z101835 |
| Recombinant Human IFNA2 | Z101585 | Recombinant Human LIF | Z100605 | Recombinant Human SERPINF1 | Z100765 |
| Recombinant Human IFNA4 | Z102405 | Recombinant Human LTA | Z100865 | Recombinant Human SHH | Z101675 |
| Recombinant Human IFNG | Z100345 | Recombinant Human Lymphotoxin (XCL1) | Z100615 | Recombinant Human SOD1 | Z100795 |
| Recombinant Human IGF1 | Z100385 | Recombinant Human MANF | Z102065 | Recombinant Human Stem Cell Factor (KITLG) | Z100815 |
| Recombinant Human IGF2 | Z102345 | Recombinant Human Maspin (SerpinB5) | Z102505 | Recombinant Human TARC (CCL17) | Z100835 |
| Recombinant Human IGFBP3 | Z100375 | Recombinant Human MCP-2 (CCL8) | Z100635 | Recombinant Human TFF1 | Z101975 |
| Recombinant Human IGFBP5 | Z102015 | Recombinant Human MCP-3 (CCL7) | Z101915 | Recombinant Human TFF2 | Z101985 |
| Recombinant Human IGFBP7 | Z102035 | Recombinant Human MCP-4 (CCL13) | Z100645 | Recombinant Human TFF3 | Z101995 |
| Recombinant Human IL10 | Z101495 | Recombinant Human M-CSF (CSF1) | Z100655 | Recombinant Human TGF Beta-3 (TGFB3) | Z102515 |
| Recombinant Human IL11 | Z100425 | Recombinant Human MEC (CCL28) | Z101025 | Recombinant Human TGFA | Z101935 |
| Recombinant Human IL13 | Z100445 | Recombinant Human MIA | Z102045 | Recombinant Human THPO | Z101515 |
| Recombinant Human IL15 | Z100455 | Recombinant Human MIA2 | Z102055 | Recombinant Human Thymosin-Beta 4 (TMSB4X) | Z102005 |
| Recombinant Human IL16 | Z102415 | Recombinant Human Midkine (NEGF2) | Z102175 | Recombinant Human TNF | Z100855 |
| Recombinant Human IL17A | Z100465 | Recombinant Human MIF | Z100915 | Recombinant Human TNFRSF10B | Z102245 |
| Recombinant Human IL17C | Z102225 | Recombinant Human MIG (CXCL9) | Z100665 | Recombinant Human TNFRSF1A | Z102235 |
| Recombinant Human IL17D | Z102425 | Recombinant Human MIP-1 beta (CCL4L1) | Z102105 | Recombinant Human TNFRSF1B | Z101745 |
| Recombinant Human IL17F | Z102435 | Recombinant Human MIP-3 (CCL23) | Z100695 | Recombinant Human TRAIL (TNFSF10) | Z101755 |
| Recombinant Human IL18 | Z100475 | Recombinant Human MIP-3 alpha (CCL20) | Z100705 | Recombinant Human TSLP | Z101095 |
| Recombinant Human IL19 | Z102445 | Recombinant Human MIP-3 beta (CCL19) | Z101945 | Recombinant Human TWEAK (TNFSF12) | Z102275 |
| Recombinant Human IL1A | Z100405 | Recombinant Human MIP-4 (CCL18) | Z100715 | Recombinant Human TWEAK Receptor (TNFRSF12A) | Z102525 |
| Recombinant Human IL1B | Z100395 | Recombinant Human MMP2 | Z101815 | Recombinant Human Uteroglobin (SCGB1A1) | Z101965 |
| Recombinant Human IL1RN | Z100415 | Recombinant Human MSTN | Z100255 | Recombinant Human VEGF (121aa) | Z102115 |
| Recombinant Human IL2 | Z100485 | Recombinant Human NAP-2 (PPBP) (CXCL7) | Z100725 | Recombinant Human VEGF (165aa) | Z100895 |
| Recombinant Human IL20 | Z101075 | Recombinant Human Neuritin | Z102185 | Recombinant Human VEGFB | Z102535 |
| Recombinant Human IL21 | Z100495 | Recombinant Human Nodal | Z102485 | Recombinant Human WISP2 | Z101925 |
| Recombinant Human IL22 | Z100945 | Recombinant Human Noggin (NOG) | Z100925 | Recombinant Human WISP3 | Z102545 |
| Recombinant Human IL28A | Z102455 | Recombinant Human NOV | Z102075 | Recombinant Human WNT1 | Z102125 |
| Recombinant Human IL29 (IFNL1) | Z100505 | Recombinant Human NRG1 | Z101625 | Recombinant Mouse Beta-Defensin 1 (DEFB1) | Z200265 |
| Recombinant Human IL3 | Z100515 | Recombinant Human NRG4 | Z100905 | Recombinant Mouse Beta-Defensin 2 (DEFB2) | Z200285 |

| Product Name | Cat.No. | Product Name | Cat.No. | Product Name | Cat.No. |
|---|---------|--|---------|-----------------------------------|---------|
| Recombinant Mouse Beta-Defensin 3 (DEFB3) | Z200275 | Recombinant Mouse IL18BP | Z200425 | Recombinant Mouse VEGF (120aa) | Z200585 |
| Recombinant Mouse CCL22 | Z200315 | Recombinant Mouse IL1A | Z200095 | Recombinant Mouse VEGF (164aa) | Z200575 |
| Recombinant Mouse CCL25 | Z200325 | Recombinant Mouse IL1B | Z200105 | Recombinant Rat CNTF | Z300035 |
| Recombinant Mouse CXCL1 | Z200345 | Recombinant Mouse IL2 | Z200135 | Recombinant Rat CXCL1 | Z300105 |
| Recombinant Mouse CXCL12 (SDF-1 beta) | Z200205 | Recombinant Mouse IL25 | Z200255 | Recombinant Rat CXCL2 | Z300115 |
| Recombinant Mouse CXCL2 | Z200355 | Recombinant Mouse IL3 | Z200145 | Recombinant Rat EGF | Z300045 |
| Recombinant Mouse CXCL4 (PF4) | Z200305 | Recombinant Mouse IL33 | Z200155 | Recombinant Rat Eotaxin (CCL11) | Z300145 |
| Recombinant Mouse EGF | Z200025 | Recombinant Mouse IL4 | Z200165 | Recombinant Rat FGF2 | Z300005 |
| Recombinant Mouse Eotaxin (CCL11) | Z200035 | Recombinant Mouse IL6 | Z200175 | Recombinant Rat G-CSF (CSF3) | Z300185 |
| Recombinant Mouse Eotaxin-2 (CCL24) | Z200405 | Recombinant Mouse KGF (FGF7) | Z200185 | Recombinant Rat GRO gamma (CXCL3) | Z300135 |
| Recombinant Mouse Exodus-2 (CCL21A) | Z200045 | Recombinant Mouse LIF | Z200195 | Recombinant Rat IFNG | Z300015 |
| Recombinant Mouse FGF1 | Z200005 | Recombinant Mouse LIX (CXCL5) | Z200555 | Recombinant Rat IGF1 | Z300055 |
| Recombinant Mouse FGF2 | Z200015 | Recombinant Mouse MCP-2 (CCL8) | Z200395 | Recombinant Rat IL10 | Z300025 |
| Recombinant Mouse FLT3 Ligand (FLT3LG) | Z200055 | Recombinant Mouse MCP-5 (CCL12) | Z200385 | Recombinant Rat IL13 | Z300095 |
| Recombinant Mouse G-CSF (CSF3) | Z200605 | Recombinant Mouse MEC (CCL28) | Z200335 | Recombinant Rat IL17 | Z300175 |
| Recombinant Mouse GH1 | Z200065 | Recombinant Mouse MIF | Z200295 | Recombinant Rat IL1B | Z300075 |
| Recombinant Mouse GM-CSF (CSF2) | Z200075 | Recombinant Mouse MIP-1 gamma (CCL9) | Z200375 | Recombinant Rat IL2 | Z300195 |
| Recombinant Mouse GRO gamma (CXCL3) | Z200415 | Recombinant Mouse MIP-3 (CCL19) | Z200455 | Recombinant Rat IL20 | Z300165 |
| Recombinant Mouse IFNG | Z200085 | Recombinant Mouse Noggin (NOG) | Z200235 | Recombinant Rat IL3 | Z300205 |
| Recombinant Mouse IGF1 | Z200625 | Recombinant Mouse SHH | Z200615 | Recombinant Rat IL5 | Z300155 |
| Recombinant Mouse IL10 | Z200115 | Recombinant Mouse SR-PSOX (CXCL16) | Z200365 | Recombinant Rat IL6 | Z300085 |
| Recombinant Mouse IL11 | Z200125 | Recombinant Mouse Stem Cell Factor (KITLG) | Z200595 | Recombinant Rat LIX (CXCL5) | Z300125 |
| Recombinant Mouse IL13 | Z200245 | Recombinant Mouse THPO | Z200535 | Recombinant Rat TNF | Z300065 |
| Recombinant Mouse IL17 | Z200435 | Recombinant Mouse TNF | Z200215 | | |

For growth factors and cytokines from mammalian system(s) and/or for bulk sizes, please refer to our website: <http://www.abmgood.com/Growth-Factors-Cytokines.html>

Technical Support

Applied Biological Materials Inc.

Telephone: (8:30am - 4:30pm PST, Mon - Fri)



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