

# HumanKine<sup>®</sup> Cytokines and Growth Factors



GMP Grade available? ✓  
 HEK293 human-cell expressed? ✓  
 Authentic human proteins? ✓

Native human folding & glycosylation? ✓  
 Animal, xeno, endotoxin and tag-free? ✓  
 High activity cytokines & growth factors? ✓

High purity? ✓  
 Manufactured in the USA? ✓  
 Expensive? ✗

## Cancer Research

| Recombinant Protein | Cat no. |
|---------------------|---------|
| BMP-4               | HZ-1045 |
| GM-CSF              | HZ-1002 |
| IFN alpha 2A        | HZ-1066 |
| IFN alpha 2B        | HZ-1072 |
| IFN-gamma           | HZ-1301 |
| IL-1 beta           | HZ-1164 |
| IL-1 beta           | HZ-1164 |
| IL-2                | HZ-1015 |
| IL-4                | HZ-1004 |
| IL-6                | HZ-1019 |
| IL-7                | HZ-1281 |
| IL-10               | HZ-1145 |
| IL-12               | HZ-1256 |
| IL-17A              | HZ-1113 |
| TGF-beta 1          | HZ-1011 |

## COVID-19

| Recombinant Protein | Cat no. |
|---------------------|---------|
| GM-CSF              | HZ-1002 |
| IFN-beta            | HZ-1298 |
| IFN-gamma           | HZ-1301 |
| IL-1 beta           | HZ-1164 |
| IL-2                | HZ-1015 |
| IL-4                | HZ-1004 |
| IL-6                | HZ-1019 |
| IL-10               | HZ-1145 |
| IL-17A              | HZ-1113 |
| IL-17F              | HZ-1116 |
| TNF-alpha           | HZ-1014 |

## Cardiovascular Research

| Recombinant Protein              | Cat no. |
|----------------------------------|---------|
| Beta NGF                         | HZ-1222 |
| BMP-4                            | HZ-1045 |
| FGF basic TS                     | HZ-1285 |
| FGF-4                            | HZ-1218 |
| FGF-7 (KGF)                      | HZ-1100 |
| G-CSF                            | HZ-1207 |
| GDNF                             | HZ-1311 |
| IFN-gamma                        | HZ-1301 |
| IL-1 beta                        | HZ-1164 |
| IL-6                             | HZ-1019 |
| IL-17A                           | HZ-1113 |
| IL-17F                           | HZ-1116 |
| LEFTY 1                          | HZ-1109 |
| OSM                              | HZ-1030 |
| PDGFaa                           | HZ-1215 |
| PDGFbb                           | HZ-1308 |
| pro IGF-2                        | HZ-1161 |
| TGF-beta 1                       | HZ-1011 |
| TGF-beta 3                       | HZ-1090 |
| Thrombin (coagulation factor II) | HZ-3010 |
| TNF-alpha                        | HZ-1014 |
| VEGF-121                         | HZ-1204 |
| VEGF-165                         | HZ-1308 |

## Immunology

| Recombinant Protein | Cat no. |
|---------------------|---------|
| Beta NGF            | HZ-1222 |
| FGF-7 (KGF)         | HZ-1100 |
| Flt3-ligand         | HZ-1151 |
| GM-CSF              | HZ-1002 |
| HGH                 | HZ-1007 |
| HSA                 | HZ-3001 |
| IFN-alpha 2A        | HZ-1066 |
| IFN-alpha 2B        | HZ-1072 |
| IFN-beta            | HZ-1298 |
| IFN-gamma           | HZ-1301 |
| IL-1 beta           | HZ-1164 |
| IL-2                | HZ-1015 |
| IL-3                | HZ-1074 |
| IL-4                | HZ-1004 |
| IL-6                | HZ-1019 |
| IL-7                | HZ-1281 |
| IL-9                | HZ-1240 |
| IL-10               | HZ-1145 |
| IL-12               | HZ-1256 |
| IL-17A              | HZ-1113 |
| IL-17F              | HZ-1116 |
| IL-23               | HZ-1254 |
| IL-27               | HZ-1275 |
| IL-28A              | HZ-1235 |
| IL-28B              | HZ-1245 |
| IL-29               | HZ-1156 |
| IL-34               | HZ-1316 |
| LEFTY 1             | HZ-1109 |
| M-CSF               | HZ-1192 |
| OSM                 | HZ-1030 |
| TGF-beta 1          | HZ-1011 |
| TGF-beta 2          | HZ-1092 |
| TNF-alpha           | HZ-1014 |
| TPO                 | HZ-1248 |

## Neuroscience

| Recombinant Protein  | Cat no. |
|----------------------|---------|
| Beta NGF             | HZ-1222 |
| BMP-2                | HZ-1128 |
| Cystatin C           | HZ-1211 |
| FGF basic TS         | HZ-1285 |
| FGF-4                | HZ-1218 |
| FGF-7                | HZ-1100 |
| FGF-8B               | HZ-1103 |
| G-CSF                | HZ-1207 |
| GDNF                 | HZ-1311 |
| HGF                  | HZ-1084 |
| IL-4                 | HZ-1004 |
| IL-6                 | HZ-1019 |
| IL-10                | HZ-1145 |
| LEFTY 1              | HZ-1109 |
| LIF                  | HZ-1292 |
| Noggin               | HZ-1118 |
| OSM                  | HZ-1030 |
| PDGF-aa              | HZ-1215 |
| PDGF-bb              | HZ-1308 |
| pro IGF-2            | HZ-1161 |
| Sonic Hedgehog (SHH) | HZ-1306 |
| TGF-beta 1           | HZ-1011 |
| TNF-alpha            | HZ-1014 |
| VEGF-121             | HZ-1204 |
| VEGF-165             | HZ-1308 |

## Stem Cells

| Recombinant Protein              | Cat no. |
|----------------------------------|---------|
| Activin A                        | HZ-1138 |
| BMP-2                            | HZ-1128 |
| BMP-4                            | HZ-1045 |
| BMP-7                            | HZ-1229 |
| EPO                              | HZ-1168 |
| FGF basic TS                     | HZ-1285 |
| FGF-4                            | HZ-1218 |
| FGF-7                            | HZ-1100 |
| FGF-8B                           | HZ-1103 |
| Flt3/FLK-2 ligand                | HZ-1151 |
| G-CSF                            | HZ-1207 |
| GDNF                             | HZ-1311 |
| GM-CSF                           | HZ-1002 |
| HGF                              | HZ-1084 |
| IFN-gamma                        | HZ-1301 |
| IL-1 beta                        | HZ-1164 |
| IL-2                             | HZ-1015 |
| IL-3                             | HZ-1074 |
| IL-4                             | HZ-1004 |
| IL-6                             | HZ-1019 |
| IL-7                             | HZ-1281 |
| IL-10                            | HZ-1145 |
| IL-12                            | HZ-1256 |
| LIF                              | HZ-1292 |
| M-CSF                            | HZ-1192 |
| Noggin                           | HZ-1118 |
| OSM                              | HZ-1030 |
| PDGFaa                           | HZ-1215 |
| PDGFbb                           | HZ-1308 |
| pro IGF-2                        | HZ-1161 |
| SCF                              | HZ-1024 |
| Sonic Hedgehog (SHH)             | HZ-1306 |
| TGF-beta 1                       | HZ-1011 |
| TGF-beta 2                       | HZ-1092 |
| TGF-beta 3                       | HZ-1090 |
| Thrombin (coagulation factor II) | HZ-3010 |
| TNF-alpha                        | HZ-1014 |
| TPO                              | HZ-1248 |
| VEGF-121                         | HZ-1204 |
| VEGF-165                         | HZ-1308 |
| Wnt3A                            | HZ-1296 |

# HumanKine® Cytokines and Growth Factors



To facilitate a seamless transition from pre clinical to clinical studies, both Research Grade and GMP Grade HumanKine cytokines and growth factors are manufactured through the same production process, minimizing variability in performance between Research Grade and GMP Grade products.

Though Research Grade and GMP Grade products go through the same production process, GMP Grade products undergo a more rigorous quality check and there is more extensive documentation for traceability and transparency for regulatory requirements.

| Target       | Cat no. | Activity (EC50) | Purity | Source |
|--------------|---------|-----------------|--------|--------|
| Activin A    | HZ-1138 | 5 ng/mL         | >95%   | HEK293 |
| beta NGF     | HZ-1222 | 3 ng/mL         | >95%   | HEK293 |
| BMP-2        | HZ-1128 | 60 ng/mL        | >95%   | HEK293 |
| BMP-4        | HZ-1045 | 10 ng/mL        | >95%   | HEK293 |
| BMP-7        | HZ-1229 | 100 ng/mL       | >95%   | HEK293 |
| Cystatin C   | HZ-1211 | 5 µM IC50       | >95%   | HEK293 |
| EPO          | HZ-1168 | 2.5 ng/mL       | >95%   | HEK293 |
| FGF-4        | HZ-1218 | 1.25 ng/mL      | >95%   | HEK293 |
| FGF-7 (KGF)  | HZ-1100 | 7.5 ng/mL       | >95%   | HEK293 |
| FGF-8b       | HZ-1103 | 10 ng/mL        | >95%   | HEK293 |
| FGF Basic-TS | HZ-1285 | 0.5 ng/mL       | >95%   | HEK293 |
| FLT3 Ligand  | HZ-1151 | 0.8 ng/mL       | >95%   | HEK293 |
| G-CSF        | HZ-1207 | 0.1 ng/mL       | >95%   | HEK293 |
| GDNF         | HZ-1311 | 10 ng/mL        | >95%   | HEK293 |
| GM-CSF       | HZ-1002 | 0.5 ng/mL       | >95%   | HEK293 |
| HGF          | HZ-1084 | 20 ng/mL        | >95%   | HEK293 |
| HGH          | HZ-1007 | 0.5 ng/mL       | >95%   | HEK293 |
| HSA          | HZ-3001 | On request      | >95%   | HEK293 |
| IFN alpha 2A | HZ-1066 | 0.4 ng/mL       | >95%   | HEK293 |
| IFN alpha 2B | HZ-1072 | 0.12 ng/mL      | >95%   | HEK293 |
| IFN beta     | HZ-1298 | 0.1 ng/mL       | >95%   | HEK293 |
| IFN gamma    | HZ-1301 | 0.05 ng/mL      | >95%   | HEK293 |
| IL-1 beta    | HZ-1164 | 0.05 ng/mL      | >95%   | HEK293 |
| IL-2         | HZ-1015 | 5 ng/mL         | >95%   | HEK293 |
| IL-3         | HZ-1074 | 2 ng/mL         | >95%   | HEK293 |
| IL-4         | HZ-1004 | 0.6 ng/mL       | >95%   | HEK293 |
| IL-6         | HZ-1019 | 0.5 ng/mL       | >95%   | HEK293 |
| IL-7         | HZ-1281 | 1 ng/mL         | >95%   | HEK293 |
| IL-9         | HZ-1240 | 1 ng/mL         | >95%   | HEK293 |

| Target                         | Cat no. | Activity (EC50) | Purity | Source |
|--------------------------------|---------|-----------------|--------|--------|
| IL-10                          | HZ-1145 | 1.5 ng/mL       | >95%   | HEK293 |
| IL-12                          | HZ-1256 | 2 ng/mL         | >95%   | HEK293 |
| IL-17A                         | HZ-1113 | 2 ng/mL         | >95%   | HEK293 |
| IL-17F                         | HZ-1116 | 10 ng/mL        | >95%   | HEK293 |
| IL-23                          | HZ-1254 | 4 ng/mL         | >95%   | HEK293 |
| IL-27                          | HZ-1275 | 12 ng/mL        | >95%   | HEK293 |
| IL-28A                         | HZ-1235 | 5 ng/mL         | >95%   | HEK293 |
| IL-28B                         | HZ-1245 | 1 ng/mL         | >95%   | HEK293 |
| IL-29                          | HZ-1156 | 5 ng/mL         | >95%   | HEK293 |
| IL-34                          | HZ-1316 | On request      | >95%   | HEK293 |
| LEFTY-1                        | HZ-1109 | 40 ng/mL        | >95%   | HEK293 |
| LIF                            | HZ-1292 | 0.2 ng/mL       | >95%   | HEK293 |
| M-CSF                          | HZ-1192 | 4 ng/mL         | >95%   | HEK293 |
| Noggin                         | HZ-1118 | 15 ng/mL        | >95%   | HEK293 |
| OSM                            | HZ-1030 | 1 ng/mL         | >95%   | HEK293 |
| PDGFaa                         | HZ-1215 | 10 ng/mL        | >95%   | HEK293 |
| PDGFbb                         | HZ-1308 | 3 ng/mL         | >95%   | HEK293 |
| Pleiotrophin-PTN               | HZ-1278 | On request      | >95%   | HEK293 |
| prolGF-II                      | HZ-1161 | 50 ng/mL        | >95%   | HEK293 |
| SCF                            | HZ-1024 | 25 ng/mL        | >95%   | HEK293 |
| Sonic Hedgehog-SHH             | HZ-1306 | 350 ng/mL       | >90%   | HEK293 |
| TGF beta 1                     | HZ-1011 | 0.5 ng/mL       | >95%   | HEK293 |
| TGF beta 2                     | HZ-1092 | 0.5 ng/mL       | >95%   | HEK293 |
| TGF beta 3                     | HZ-1090 | 0.5 ng/mL       | >95%   | HEK293 |
| Thrombin-Coagulation Factor II | HZ-3010 | On request      | >95%   | HEK293 |
| Thrombopoietin                 | HZ-1248 | 5 ng/mL         | >95%   | HEK293 |
| TNF alpha                      | HZ-1014 | 0.5 ng/mL       | >95%   | HEK293 |
| VEGF121                        | HZ-1204 | 15 ng/mL        | >95%   | HEK293 |
| VEGF165                        | HZ-1038 | 5 ng/mL         | >95%   | HEK293 |
| Wnt3A                          | HZ-1296 | 20 ng/mL        | >90%   | HEK293 |