### **Bone Morphogenetic Protein 10 (BMP10)**

DNA Sequence (5' to 3'):

ATGGGTTCTCTGGTTCTGCCGCTGAGCGCCGTCTTCTGCCTGGTGGCTCGTCTGGCTTCTG GCAGCCCCATCATGGGCCTTGAGCAGTCGCCCCTGGAAGAAGACATGCCCTTCTTTGATGA TATCTTCACAGAACAAGATGGTATTGACTTCAACACACTGCTGCAGAGCATGAAGGACGAGT TTCTCAAGACGTTGAATCTGTCAGACATTCCCCCACAGGACACAGGCAGAGTGGATCCGCC GGAGTACATGCTGGAGCTCTACAACAAATTCGCCACGGACCGGACCTCCATGCCATCTGCT CGGAAGTATCCTCTCCTCTTCAACGTGTCCATCCCTCACCACGAAGAGGTCGTCATGGCTGA ACTGAGGTTGTACACGCTGGTGCAGAGAGATCGTTTGATGTATGATGGTGTGGACCGTAAAA TAATCATCTTTGAGGTTCTAGAGAGTGCCGATGGTAGCGAGGATGAGAGGAGCATGCTGGT CTTGGTATCAACAGAGATCTACGGAACCAACAGTGAGTGGGAGACATTTGACATCACGGATG CCACCAGACGTTGGCAAAAGTCAGGCCCATCAACCCACCAGCTGGAGATCCACATCGAAAG CAGACAAAACCAAGCTGAGGACACCGGAAGGGGACAACTGGAAATAGATATGAGTGCTCAG AATAAGCACGACCCTTTGCTTGTTGTTTTCTGATGACCAAAGCGGTGACAAGGAGCAGAA AGAAGAGCTGAATGAACTGATCTCCCACGAGCAGGATCTGGACCTGGGCACCGATGGTTTC TTTGGTGGGCCTGATGAAGAGGCTCTCCTGCAGATGAGGTCAAACATGATCGATGACTCTAC CGCTCGGATCAGGAGGAACGCCAAGGGGAACTACTGCAAGAAGACTCCACTGTACATCGAC TTCAAGGAGATCGGCTGGGACTCCTGGATCATCGCGCCTCCTGGTTACGAGGCCTATGAGT GCCGCGGTGTGCGAACTACCCTCTGGCGGAGCACCTCACACCTACGAAACACGCAATTAT CCAGGCCTTGGTCCACCTCAAGAATTCCCAGAAAGCCTCCAAAGCCTGCTGCGTGCCCACG AAGCTGGATCCCATCCCATCCTATTTAGATAAAGGTGTTGTCACCTATAAGTTTAAATAC GAAGGAATGGCCGTGTCTGAATGTGGCTGTAGATAG

# Protein Sequence:

MGSLVLTLCALFCLAAYLVSGSPIMNLEQSPLEEDMSLFGDVFSEQDGVDFNTLLQSMKD EFLKTLNLSDIPTQDSAKVDPPEYMLELYNKFATDRTSMPSANIIRSFKNEDLFSQPVSF NGLRKYPLLFNVSIPHHEEVIMAELRLYTLVQRDRMIYDGVDRKITIFEVLESKGDNEGE RNMLVLVSGEIYGTNSEWETFDVTDAIRRWQKSGSSTHQLEVHIESKHDEAEDASSGRLE IDTSAQNKHNPLLIVFSDDQSSDKERKEELNEMISHEQLPELDNLGLDSFSSGPGEEALL QMRSNIIYDSTARIRRNAKGNYCKRTPLYIDFKEIGWDSWIIAPPGYEAYECRGVCNYPL AEHLTPTKHAIIQALVHLKNSQKASKACCVPTKLEPISILYLDKGVVTYKFKYEGMAVSECGCR

#### **Chloramphenicol Acetyltransferase (CAT)**

DNA Sequence (5' to 3'):

Protein Sequence:

MEKKITGYTTVDISQWHRKEHFEAFQSVAQCTYNQTVQLDITAFLKTVKKNKHKFYPAFI HILARLMNAHPEFRMAMKDGELVIWDSVHPCYTVFHEQTETFSSLWSEYHDDFRQFLHIY SQDVACYGENLAYFPKGFIENMFFVSANPWVSFTSFDLNVANMDNFFAPVFTMGKYYTQG DKVLMPLAIQVHHAVCDGFHVGRMLNELQQYCDEWQGGA

### Caspase 9 (CASP9)

DNA Sequence (5' to 3'):

#### Protein Sequence:

MDEADRRLLRRCRLRLVEELQVDQLWDALLSRELFRPHMIEDIQRAGSGSRRDQARQLII DLETRGSQALPLFISCLEDTGQDMLASFLRTNRQAAKLSKPTLENLTPVVLRPEIRKPEV LRPETPRPVDIGSGGFGDVGALESLRGNADLAYILSMEPCGHCLIINNVNFCRESGLRTR TGSNIDCEKLRRRFSSLHFMVEVKGDLTAKKMVLALLELAQQDHGALDCCVVVILSHGCQ ASHLQFPGAVYGTDGCPVSVEKIVNIFNGTSCPSLGGKPKLFFIQACGGEQKDHGFEVAS TSPEDESPGSNPEPDATPFQEGLRTFDQLDAISSLPTPSDIFVSYSTFPGFVSWRDPKSG SWYVETLDDIFEQWAHSEDLQSLLLRVANAVSVKGIYKQMPGCFNFLRKKLFFKTS

### **Dual Emission Green Fluorescent Protein (deGFP)**

DNA Sequence (5' to 3'):

ATGGAGCTTTTCACTGGCGTTGTTCCCATCCTGGTCGAGCTGGACGCGACGTAAACGGCC
ACAAGTTCAGCGTGTCCGGCGAGGGCGAGGCCGATGCCACCTACGGCAAGCTGACCCTGA
AGTTCATCTGCACCACCGGCAAGCTGCCCGTGCCCTGGCCCACCCTCGTGACCACCCTGAC
CTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCAAG
TCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGACGACGCAACT
ACAAGACCCGCGCCGAGGTGAAGTTCGAGGGCGACACCCTGGTGAACCGCATCGAGCTGA
AGGGCATCGACTTCAAGGAGGACGCAACATCCTGGGGCACAAGCTGGAGTACAACTACAA
CAGCCACAACGTCTATATCATGGCCGACAAGCAGAAGAACGGCATCAAGGTGAACTTCAAG
ATCCGCCACAACATCGAGGACGCAGCGTGCAGCTCGCCGACCACTACCAGCAGAACACC
CCCATCGGCGACGGCCCCGTGCTGCCCGACAACCACTACCTGAGCACCCCAGTCCGCC
CTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCCGACCACTACCAGCAGCCCCC
GCCGGGATCTAA

## Protein Sequence:

MELFTGVVPILVELDGDVNGHKFSVSGEGEGDATYGKLTLKFICTTGKLPVPWPTLVTTLTYGVQ CFSRYPDHMKQHDFFKSAMPEGYVQERTIFFKDDGNYKTRAEVKFEGDTLVNRIELKGIDFKED GNILGHKLEYNYNSHNVYIMADKQKNGIKVNFKIRHNIEDGSVQLADHYQQNTPIGDGPVLLPDN HYLSTQSALSKDPNEKRDHMVLLEFVTAAGI

# Prothrombin (FII)

DNA Sequence (5' to 3'):

ATGGCGCACGTCCGAGGCTTGCAGCTGCCTGGCTGGCCTGGCTGCCCTGTGTAGC TCCGGCGAGCCAACACCTTCTTGGAGGAGGTGCGCAAGGGCAACCTAGAGCGAGAGTGCG TGGAGGAGACGTGCAGCTACGAGGAGGCCTTCGAGGCTCTGGAGTCCTCCACGGCTACGG ATGTGTTCTGGGCCAAGTACACAGCTTGTGAGACAGCGAGGACGCCTCGAGATAAGCTTGC TGCATGTCTGGAAGGTAACTGTGCTGAGGGTCTGGGTACGAACTACCGAGGGCATGTGAAC ATCACCCGGTCAGGCATTGAGTGCCAGCTATGGAGGAGTCGCTACCCACATAAGCCTGAAA TCAACTCCACTACCCATCCTGGGGCCGACCTACAGGAGAATTTCTGCCGCAACCCCGACAG CAGCACCACGGGACCCTGGTGCTACACTACAGACCCCACCGTGAGGAGGCAGGAATGCAG CATCCCTGTCTGTGGCCAGGATCAAGTCACTGTAGCGATGACTCCACGCTCCGAAGGCTCC AGTGTGAATCTGTCACCTCCATTGGAGCAGTGTGTCCCTGATCGGGGGCAGCAGTACCAGG GGCGCCTGGCGGTGACCACACATGGGCTCCCCTGCCTGGCCTGGGCCAGCGCACAGGCC AAGGCCCTGAGCAAGCACCAGGACTTCAACTCAGCTGTGCAGCTGGTGGAGAACTTCTGCC GCAACCCAGACGGGGATGAGGAGGGCGTGTGGTGCTATGTGGCCGGGAAGCCTGGCGAC TTTGGGTACTGCGACCTCAACTATTGTGAGGAGGCCGTGGAGGAGGAGACAGGAGATGGG CTGGATGAGGACTCAGACAGGGCCATCGAAGGGCGTACCGCCACCAGTGAGTACCAGACT TTCTTCAATCCGAGGACCTTTGGCTCGGGAGAGGCAGACTGTGGGCTGCGACCTCTGTTCG AGAAGAAGTCGCTGGAGGACAAAACCGAAAGAGAGCTCCTGGAATCCTACATCGACGGGCG CATTGTGGAGGGCTCGGATGCAGAGATCGGCATGTCACCTTGGCAGGTGATGCTTTTCCGG AAGAGTCCCCAGGAGCTGCTGTGGGGCCAGCCTCATCAGTGACCGCTGGGTCCTCACC GCCGCCCACTGCCTCCTGTACCCGCCCTGGGACAAGAACTTCACCGAGAATGACCTTCTGG TGCGCATTGGCAAGCACTCCCGCACAAGGTACGAGCGAAACATTGAAAAGATATCCATGTTG GAAAAGATCTACATCCACCCCAGGTACAACTGGCGGGAGAACCTGGACCGGGACATTGCCC TGATGAAGCTGAAGAAGCCTGTTGCCTTCAGTGACTACATTCACCCTGTGTGTCTGCCCGAC AGGGAGACGGCAGCCAGCTTGCTCCAGGCTGGATACAAGGGGCGGGTGACAGGCTGGGG CAACCTGAAGGAGACGTGGACAGCCAACGTTGGTAAGGGGCAGCCCAGTGTCCTGCAGGT GGTGAACCTGCCCATTGTGGAGCGGCCGGTCTGCAAGGACTCCACCCGGATCCGCATCAC TGACAACATGTTCTGTGCTGGTTACAAGCCTGATGAAGGGAAACGAGGGGATGCCTGTGAA GGTGACAGTGGGGGACCCTTTGTCATGAAGAGCCCCTTTAACAACCGCTGGTATCAAATGG GCATCGTCTCATGGGGTGAAGGCTGTGACCGGGATGGGAAATATGGCTTCTACACACATGT GTTCCGCCTGAAGAAGTGGATACAGAAGGTCATTGATCAGTTTGGAGAGTAG

Protein Sequence:

MAHVRGLQLPGCLALAALCSLVHSQHVFLAPQQARSLLQRVRRANTFLEEVRKGNLEREC VEETCSYEEAFEALESSTATDVFWAKYTACETARTPRDKLAACLEGNCAEGLGTNYRGHV NITRSGIECQLWRSRYPHKPEINSTTHPGADLQENFCRNPDSSTTGPWCYTTDPTVRRQE CSIPVCGQDQVTVAMTPRSEGSSVNLSPPLEQCVPDRGQQYQGRLAVTTHGLPCLAWASA QAKALSKHQDFNSAVQLVENFCRNPDGDEEGVWCYVAGKPGDFGYCDLNYCEEAVEEETG DGLDEDSDRAIEGRTATSEYQTFFNPRTFGSGEADCGLRPLFEKKSLEDKTERELLESYI DGRIVEGSDAEIGMSPWQVMLFRKSPQELLCGASLISDRWVLTAAHCLLYPPWDKNFTEN DLLVRIGKHSRTRYERNIEKISMLEKIYIHPRYNWRENLDRDIALMKLKKPVAFSDYIHP VCLPDRETAASLLQAGYKGRVTGWGNLKETWTANVGKGQPSVLQVVNLPIVERPVCKDST RIRITDNMFCAGYKPDEGKRGDACEGDSGGPFVMKSPFNNRWYQMGIVSWGEGCDRDGKY GFYTHVFRLKKWIQKVIDQFGE

# **Coagulation Factor 10 (FX)**

DNA Sequence (5' to 3'):

GGGGAAAGTCTGTTCATCCGCAGGGAGCAGGCCAACAACATCCTGGCGAGGGTCACGAGG GCCAATTCCTTTCTTGAAGAGATGAAGAAAGGACACCTCGAAAGAGAGTGCATGGAAGAGA GAATAAATACAAAGATGGCGACCAGTGTGAGACCAGTCCTTGCCAGAACCAGGGCAAATGT AAAGACGGCCTCGGGGAATACACCTGCACCTGTTTAGAAGGATTCGAAGGCAAAAACTGTG AATTATTCACACGGAAGCTCTGCAGCCTGGACAACGGGGACTGTGACCAGTTCTGCCACGA GGAACAGAACTCTGTGGTGTGCTCCTGCGCCCGCGGGTACACCCTGGCTGACAACGGCAA GGCCTGCATTCCCACAGGGCCCTACCCCTGTGGGAACAGACCCTGGAACGCAGGAAGAG GTCAGTGGCCCAGGCCACCAGCAGCAGCGGGAGGCCCCTGACAGCATCACATGGAAGCC ATATGATGCAGCCGACCTGGACCCCACCGAGAACCCCTTCGACCTGCTTGACTTCAACCAG ACGCAGCCTGAGAGGGGCGACAACAACCTCACCAGGATCGTGGGAGGCCAGGAATGCAAG GACGGGGAGTGTCCCTGGCAGGCCCTGCTCATCAATGAGGAAAACGAGGGTTTCTGTGGT GGAACTATTCTGAGCGAGTTCTACATCCTAACGGCAGCCCACTGTCTCTACCAAGCCAAGAG ACGAGGTGGAGGTCATCAAGCACAACCGGTTCACAAAGGAGACCTATGACTTCGACAT CCCGAGCGTGACTGGGCCGAGTCCACGCTGATGACGCAGAAGACGGGGATTGTGAGCGGC TTCGGGCGCACCCACGAGAAGGGCCGGCAGTCCACCAGGCTCAAGATGCTGGAGGTGCCC TACGTGGACCGCAACAGCTGCAAGCTGTCCAGCAGCTTCATCATCACCCAGAACATGTTCTG TGCCGGCTACGACACCAAGCAGGAGGATGCCTGCCAGGGGGACAGCGGGGGCCCGCACG TCACCCGCTTCAAGGACACCTACTTCGTGACAGGCATCGTCAGCTGGGGAGAGGGCTGTGC CCGTAAGGGGAAGTACGGGATCTACACCAAGGTCACCGCCTTCCTCAAGTGGATCGACAGG TCCATGAAAACCAGGGGCTTGCCCAAGGCCAAGAGCCATGCCCCGGAGGTCATAACGTCCT CTCCATTAAAGTGA

## Protein Sequence:

MGRPLHLVLLSASLAGLLLLGESLFIRREQANNILARVTRANSFLEEMKKGHLERECMEE
TCSYEEAREVFEDSDKTNEFWNKYKDGDQCETSPCQNQGKCKDGLGEYTCTCLEGFEGKN
CELFTRKLCSLDNGDCDQFCHEEQNSVVCSCARGYTLADNGKACIPTGPYPCGKQTLERR
KRSVAQATSSSGEAPDSITWKPYDAADLDPTENPFDLLDFNQTQPERGDNNLTRIVGGQE
CKDGECPWQALLINEENEGFCGGTILSEFYILTAAHCLYQAKRFKVRVGDRNTEQEEGGE
AVHEVEVVIKHNRFTKETYDFDIAVLRLKTPITFRMNVAPACLPERDWAESTLMTQKTGI
VSGFGRTHEKGRQSTRLKMLEVPYVDRNSCKLSSSFIITQNMFCAGYDTKQEDACQGDSG
GPHVTRFKDTYFVTGIVSWGEGCARKGKYGIYTKVTAFLKWIDRSMKTRGLPKAKSHAPEVITSS
PLK

# Fibroblast Growth Factor 21 (FGF21)

DNA Sequence (5' to 3'):

### Protein Sequence:

MDSDETGFEHSGLWVSVLAGLLLGACQAHPIPDSSPLLQFGGQVRQRYLYTDDAQQTEAH LEIREDGTVGGAADQSPESLLQLKALKPGVIQILGVKTSRFLCQRPDGALYGSLHFDPEA CSFRELLLEDGYNVYQSEAHGLPLHLPGNKSPHRDPAPRGPARFLPLPGLPPALPEPPGI LAPQPPDVGSSDPLSMVGPSQGRSPSYAS

# Single Chain Variable Fragment R4 (scFvR4)

DNA Sequence (5' to 3'):

#### Protein Sequence:

MAEVQLVESGGSLVKPGGSLRLSCAASGFTFSNYSMNWVRQAPGKGLEWISSISGSSRYIYYAD FVKGRFTISRDNATNSLYLQMNSLRAEDTAVYCVRSSITTFGGGMDVWGRGTLVTVSSGGGGS GGGGSGGGSQSVLTQPASVSGSPGQSITISCAGTSSDVGGYNYVSWYQQHPGKAPKLMIYE DSKRPSGVSNRFSGSKSGNTASLTISGLQAEDEADYYCSSYTTRSTRVFGGGTKLAVLGAAAEQ KLISEEDLNGAAHHHHHH