Fig. 1

SEQ ID NO: 1: nucleotide sequence of K3-1115 antibody heavy chain (h#32A1-H1-1)

ATGAAACACCTGTGGTTCTTCCTCCTGCTGGTGGCAGCTCCCAGATGGGTGCTGAGCGAAGTCC
AGCTTGTGGAAAGCGGAGGGGGACTCGTTCAGCCAGGAGGCTCTCTGCGCCTGTCATGCGCTGC
CAGCGGATTTAATTTCAATGATTATTTTATGAACTGGGTCAGGCAGGCTCCGGGAAAAGGGCTG
GAATGGGTCGCCCAGATCAGAAACAAGATCTATACTTACGCTACATTCTACGCCGCATCTGTAA
AGGGGAGGTTTACAATTAGTCGCGACAATGCAAAAAATAGTCTGTATCTCCAAATGAACTCCCT
CCGCGCAGAGGATACTGCTGTCTACTACTGCGCCAGGTCCTTGACTGGCGGCGACTATTTTGAT
TACTGGGGACAGGGCACCCTGGTGACGGTGAGCTCAGCCAGCACCAAGGGCCCTTCCGTGTTCC
CTCTGGCCCCTTGTAGCCGTTCCACCAGCGAGTCCACCGCCGCCCTTGGCTGTCTGGTGAAGGA
CTACTTCCCTGAGCCTGTGACCGTGAGCTGGAACTCCGGAGCCCTTACCAGCGGCGTGCACACC
TTCCCTGCCGTGCTGCAGTCCAGCGGCCTTTACTCCCTGAGCTCCGTGGTGACCGTGCCTAGCT
CCAACTTCGGCACCCAAACCTACACCTGTAACGTGGACCACAAGCCTAGCAACACCAAGGTGGA
CAAGACCGTGGAGCGTAAGTGTTGTGTGGAGTGTCCTCCTTGTCCTGCCCCTCCTGTGGCCGGA
CCTTCCGTGTTCCTTTTCCCTCCTAAGCCTAAGGACACCCTGATGATCAGCCGTACCCCTGAGG
TGACCTGTGTGGTGGTGGACGTGTCCCACGAGGACCCTGAGGTGCAGTTCAACTGGTACGTGGA
CGGCGTGGAGGTGCACAACGCCAAGACCAAGCCTCGTGAGGAGCAATTCAACAGCACCTTCCGT
GTGGTGTCCGTGCTTACCGTGGTGCACCAAGACTGGCTGAACGGCAAGGAGTACAAGTGTAAGG
TGAGCAACAAGGGACTTCCTGCCCCTATCGAGAAGACCATCTCCAAGACCAAGGGCCAACCTCG
TGAGCCTCAAGTGTACACCCTTCCTCCTAGCCGTGAGGAGATGACCAAGAACCAAGTGTCCCTT
ACCTGTCTGGTGAAGGGCTTCTACCCTAGCGACATCGCCGTGGAGTGGGAGTCCAACGGACAAC
CTGAGAACAACTACAAGACCACCCCTCCTATGCTTGACAGCGACGGCTCCTTCTTCCTGTACAG
CAAGCTGACCGTGGACAAGTCCCGTTGGCAACAAGGCAACGTGTTCAGCTGTTCCGTGATGCAC
GAGGCCCTGCACAACCACTACACCCAAAAGAGCCTTTCCCTGAGCCCTGGAAAG

signal sequence (1-57), variable region (58-420), constant region (421-1398)

SEQ ID NO: 2: amino acid sequence of K3-1115 antibody heavy chain (h#32A1-H1-1)

MKHLWFFLLLVAAPRWVLSEVQLVESGGGLVQPGGSLRLSCAASGFNFNDYFMNWVRQAPGKGL
EWVAQIRNKIYTYATFYAASVKGRFTISRDNAKNSLYLQMNSLRAEDTAVYYCARSLTGGDYFD
YWGQGTLVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHT
FPAVLQSSGLYSLSSVVTVPSSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPVAG
PSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFR

VVSVLTVVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSL
TCLVKGFYPSDIAVEWESNGQPENNYKTTPPMLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMH
EALHNHYTQKSLSLSPGK

signal sequence (1-19), variable region (20-140), constant region (141-466)

Fig. 2

SEQ ID NO: 3: nucleotide sequence of K3-1115 antibody light chain (h#32A1-L2-15)

ATGGTGCTGCAGACCCAGGTGTTCATCTCCCTGCTGCTGTGGATCTCCGGCGCATATGGCGAAA
TTCTGATGACGCAGAGTCCTGCAACTCTTAGTCTGTCACCTGGCGAGAGAGCCACACTCAGCTG
CCGAGCGTCCCAGTCCGTGACCATTAGCGGCTATTCTTTTATTCATTGGTATCAGCAAAAGCCT
GGACAGGCGCCAAGGCTGCTCATTTACAGAGCAAGCAACCTTGCCTCTGGCATTCCAGCAAGAT
TCAGCGGGAGCGGATCAGGGACAGATTTCACCTTGACCATCTCCTCCCTGGAGCCGGAGGATTT
CGCGTTGTATTATTGTCAGCAATCTAGGAAGAGTCCATGGACATTTGGCCAGGGCACCAAAGTG
GAGATCAAGCGTACGGTGGCCGCCCCCTCCGTGTTCATCTTCCCCCCCTCCGACGAGCAGCTGA
AGTCCGGCACCGCCTCCGTGGTGTGCCTGCTGAATAACTTCTACCCCAGAGAGGCCAAGGTGCA
GTGGAAGGTGGACAACGCCCTGCAGTCCGGGAACTCCCAGGAGAGCGTGACCGAGCAGGACAGC
AAGGACAGCACCTACAGCCTGAGCAGCACCCTGACCCTGAGCAAAGCCGACTACGAGAAGCACA
AGGTGTACGCCTGCGAGGTGACCCACCAGGGCCTGAGCTCCCCCGTCACCAAGAGCTTCAACAG
GGGGGAGTGT

signal sequence (1-60), variable region (61-399), constant region (400-714)

SEQ ID NO: 4: amino acid sequence of K3-1115 antibody light chain (h#32A1-L2-15)

MVLQTQVFISLLLWISGAYGEILMTQSPATLSLSPGERATLSCRASQSVTISGYSFIHWYQQKP
GQAPRLLIYRASNLASGIPARFSGSGSGTDFTLTISSLEPEDFALYYCQQSRKSPWTFGQGTKV
EIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDS
KDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

signal sequence (1-20), variable region (21-133), constant region (134-238)

Fig. 3

SEQ ID NO: 5: nucleotide sequence of K3-1115/T103E antibody heavy chain

atgaaacacctgtggttcttcctcctgctggtggcagctcccagatgggtgctgagcga
agtccagcttgtggaaagcggaggggactcgttcagccaggaggctctctgcgcctgt
catgcgctgccagcggatttaatttcaatgattattttatgaactgggtcaggcaggct
ccgggaaaagggctggaatgggtcgcccagatcagaaacaagatctatacttacgctac
attctacgccgcatctgtaaaggggaggtttacaattagtcgcgacaatgcaaaaaata
gtctgtatctccaaatgaactccctccgcgcagaggatactgctgtctactactgcgcc
aggtccttggagggcggcgactattttgattactggggacagggcaccctggtgacggt
gagctcagccagcaccaagggcccttccgtgttccctctggcccctttgtagccgttcca
ccagcgagtccaccgccgcccttggctgtctggtgaaggactacttccctgagcctgtg
accgtgagctggaactccggagcccttaccagcggcgtgcacaccttccctgccgtgct
gcagtccagcggcctttactccctgagctccgtggtgaccgtgcctagctccaacttcg
gcacccaaacctacacctgtaacgtggaccacaagcctagcaacaccaaggtggacaag
accgtggagcgtaagtgttgtgtggagtgtcctccttgtcctgcccctcctgtggccgg
accttccgtgttccttttcccctcctaagcctaaggacaccctgatgatcagccgtaccc
ctgaggtgacctgtgtggtggtggacgtgtcccacgaggaccctgaggtgcagttcaac
tggtacgtggacggcgtggaggtgcacaacgccaagaccaagcctcgtgaggagcaatt
caacagcaccttccgtgtggtgtccgtgcttaccgtggtgcaccaagactggctgaacg
gcaaggagtacaagtgtaaggtgagcaacaagggacttcctgcccctatcgagaagacc
atctccaagaccaagggccaacctcgtgagcctcaagtgtacaccttcctcctagccg
tgaggagatgaccaagaaccaagtgtcccttacctgtctggtgaagggcttctacccta
gcgacatcgccgtggagtgggagtccaacggacaacctgagaacaactacaagaccacc
cctcctatgcttgacagcgacggctccttcttcctgtacagcaagctgaccgtggacaa
gtcccgttggcaacaaggcaacgtgttcagctgttccgtgatgcacgaggccctgcaca
accactacacccaaaagagcctttccctgagccctggaaag

signal sequence (1-57), variable region (58-420), constant region (421-1398)

SEQ ID NO: 6: amino acid sequence of K3-1115/T103E antibody heavy chain

MKHLWFFLLLVAAPRWVLSEVQLVESGGGLVQPGGSLRLSCAASGFNFNDYFMNWVRQA
PGKGLEWVAQIRNKIYTYATFYAASVKGRFTISRDNAKNSLYLQMNSLRAEDTAVYYCA
RSLEGGDYFDYWGQGTLVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPV

TVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSNFGTQTYTCNVDHKPSNTKVDK
TVERKCCVECPPCPAPPVAGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFN
WYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGKEYKCKVSNKGLPAPIEKT
ISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT
PPMLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK
signal sequence (1-19), variable region (20-140), constant region (141-466)

Fig. 4

Amino acid sequences of respective CDRs of #32A1 antibody and K3-1115/T103E antibody

SEQ ID NO: 7: CDRH1 of #32A1 antibody
(DYFMN)

SEQ ID NO: 8: CDRH2 of #32A1 antibody
(QIRNKIYTYATFYAESLEG)

SEQ ID NO: 9: CDRH2 of #32A1 antibody
(QIRNKIYTYATFYA)

SEQ ID NO: 10: CDRH3 of #32A1 antibody
(SLTGGDYFDY)

SEQ ID NO: 11: CDRH3 of K3-1115/T103E antibody
(SLEGGDYFDY)

SEQ ID NO: 12: CDRL1 of #32A1 antibody
(RASQSVTISGYSFIH)

SEQ ID NO: 13: CDRL2 of #32A1 antibody
(RASNLAS)

SEQ ID NO: 14: CDRL3 of #32A1 antibody
(QQSRKSPWT)

Fig. 5 Inhibition of bone resorption activity of normal osteoclast precursor cells by addition of K3-1115/T103E antibody

