Electronic Supplementary Material (ESI) for Integrative Biology

Supplementary Figure 1

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  1 MAPISLSWLL RLATFCHLTV LLAGLESHWC YEVQAESSNY PCLVPVKWGG NCQKDRQSPI
 61 NIVTTKAKVD KKLGRFFFSG YDKKQTWTVQ NNGHSVMMLL ENKASISGGG LPAPYQAKQL
121 HLHWSDLPYK GSEHSLDGEH FAMEMHIVHE KEKGTSRNVK EAQDPEDEIA VLAFLVEAGT
181 QVNEGFQPLV EALSNIPKPE MSTTMAESSL LDLLPKEEKL RHYFRYLGSL TTPTCDEKVV
241 WTVFREPIQL HREQILAFSQ KLYYDKEQTV SMKDNVRPLQ QLGQRTVIKS GGGGTFEKQI
301 GEVKPRTTPA AGGMDESVVL EPEATGESSS LEPTPSSQEA QKALGTSPEL PTGVTGSSGT
361 RLPPTPKAQD GGPVGTELFR VPPVSTAATW QSSAPHQPGP SLWAEAKTSE APSTQDLSTQ
421 ASTASSPAPE ENAPSEGQRV WGRGQSPRPE NSLEREEMGP VPAHTDAFQD WGPGSMAHVS
481 VVPVSSEGTP SREPVASGSW TPKAEEPIHA TMDPQRLGVL ITPVPDAQAA TRRQIIPIVA
541 GVVAGIVLIG LALLLIWGGG GGGAIYENPF ARK
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   1 ATGGCTCCGA TATCTCTGTC GTGGCTGCTC CGCTTGGCCA CCTTCTGCCA TCTGACTGTC
  61 CTGCTGGCCG GTCTAGAGTC ACACTGGTGC TACGAGGTTC AAGCCGAGTC CTCCAACTAC
 121 CCCTGCTTGG TGCCAGTCAA GTGGGGTGGA AACTGCCAGA AGGACCGCCA GTCCCCCATC
 181 AACATCGTCA CCACCAAGGC AAAGGTGGAC AAAAAACTGG GACGCTTCTT CTTCTCTGGC
 241 TACGATAAGA AGCAAACGTG GACTGTCCAA AATAACGGGC ACTCAGTGAT GATGTTGCTG
 301 GAGAACAAGG CCAGCATTTC TGGAGGAGGA CTGCCTGCCC CATACCAGGC CAAACAGTTG
 361 CACCTGCACT GGTCCGACTT GCCATATAAG GGCTCGGAGC ACAGCCTCGA TGGGGAGCAC
 421 TTTGCCATGG AGATGCACAT AGTACATGAG AAAGAGAAGG GGACATCGAG GAATGTGAAA
 481 GAGGCCCAGG ACCCTGAAGA CGAAATTGCG GTGCTGGCCT TTCTGGTGGA GGCTGGAACC
 541 CAGGTGAACG AGGGCTTCCA GCCACTGGTG GAGGCACTGT CTAATATCCC CAAACCTGAG
 601 ATGAGCACTA CGATGGCAGA GAGCAGCCTG TTGGACCTGC TCCCCAAGGA GGAGAAACTG
 661 AGGCACTACT TCCGCTACCT GGGCTCACTC ACCACACCGA CCTGCGATGA GAAGGTCGTC
 721 TGGACTGTGT TCCGGGAGCC CATTCAGCTT CACAGAGAAC AGATCCTGGC ATTCTCTCAG
 781 AAGCTGTACT ACGACAAGGA ACAGACAGTG AGCATGAAGG ACAATGTCAG GCCCCTGCAG
 841 CAGCTGGGGC AGCGCACGGT GATAAAGTCC GGGGGAGGAG GTACCTTCGA GAAGCAGATC
 901 GGCGAGGTGA AGCCCAGGAC CACCCCTGCC GCCGGGGGAA TGGACGAGTC TGTGGTCCTG
 961 GAGCCCGAAG CCACAGGCGA AAGCAGTAGC CTGGAGCCGA CTCCTTCTTC CCAGGAAGCA
1021 CAGAAGGCCC TGGGGACCTC CCCAGAGCTG CCGACGGGCG TGACTGGTTC CTCAGGGACC
1081 AGGCTCCCCC CGACGCCAAA GGCTCAGGAT GGAGGGCCTG TGGGCACGGA GCTTTTCCGA
1141 GTGCCTCCCG TCTCCACTGC CGCCACGTGG CAGAGTTCTG CTCCCCACCA ACCTGGGCCC
1201 AGCCTCTGGG CTGAGGCAAA GACCTCTGAG GCCCCGTCCA CCCAGGACCT CTCCACCCAG
1261 GCCTCCACTG CGTCCTCCCC AGCCCCAGAG GAGAATGCTC CGTCTGAAGG CCAGCGTGTG
1321 TGGGGTCGGG GACAGAGCCC CAGGCCAGAG AACTCTCTGG AGCGGGAGGA GATGGGTCCC
1381 GTGCCAGCGC ACACGGATGC CTTCCAGGAC TGGGGGCCTG GCAGCATGGC CCACGTCTCT
1441 GTGGTCCCTG TCTCCTCAGA AGGGACCCCC AGCAGGGAGC CAGTGGCTTC AGGCAGCTGG
1501 ACCCCTAAGG CTGAGGAACC CATCCATGCC ACCATGGACC CCCAGAGGCT GGGCGTCCTT
1561 ATCACTCCTG TCCCTGACGC CCAGGCTGCC ACCCGTCGAC AGATCATTCC AATTGTAGCT
1621 GGTGTGGTTG CTGGAATTGT TCTTATTGGC CTTGCATTAC TATTAATATG GGGTGGCGGA
1681 GGGGGAGGTG CTATATATGA AAATCCATTT GCAAGAAAAT AA
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Fig S1. The amino acid (top) and nucleotide (bottom) sequences of the artificial receptor. The receptor consists of 4 domains: carbonic anhydrase IV (orange), fraktalkine stalk (blue), transmembrane helix (red), and the Abl substrate sequence (green). The active tyrosine is in bold.

Supplementary Figure 2

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  1 MLEKHSWYHG PVSRNAAEYL LSSGINGSFL VRESESSPGQ RSISLRYEGR VYHYRINTAS
 61 DGKLYVSSES RFNTLAELVH HHSTVADGLI TTLHYPGTSD TVDMGVIKPD MKIKLRMEGA
121 VNGHKFVIEG DGKGKPFEGK QTMDLTVIEG APLPFAYDIL TTVFDYGNRV FAKYPKDIPD
181 YFKQTFPEGY SWERSMTYED QGICIATNDI TMMKGVDDCF VYKIRFDGVN FPANGPVMQR
241 KTLKWEPSTE KMYVRDGVLK GDVNMALLLE GGGHYRCDFK TTYKAKKVVQ LPDYHFVDHR
301 IEIVSHDKDY NKVKLYEHAE AHSGLPRQAG *
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  1 ATGCTGGAGA AACATTCCTG GTATCATGGC CCTGTATCTC GGAATGCTGC TGAGTATCTG
 61 CTGAGCAGCG GAATCAACGG CAGCTTCTTA GTGCGGGAGA GTGAGAGTAG CCCTGGCCAG
121 AGATCCATCT CGCTGCGGTA TGAAGGGAGG GTGTACCACT ACAGGATCAA CACTGCCTCT
181 GATGGCAAGC TGTACGTGTC CTCCGAGAGC CGCTTCAACA CTCTGGCTGA GTTAGTTCAC
241 CATCACTCCA CGGTGGCTGA TGGCCTCATC ACCACACTCC ACTACCCAGG CACCTCCGAC
301 ACCGTCGACA TGGGCGTGAT CAAGCCCGAC ATGAAGATCA AGCTGCGGAT GGAGGGCGCC
361 GTGAACGGCC ACAAATTCGT GATCGAGGGC GACGGGAAAG GCAAGCCCTT TGAGGGTAAG
421 CAGACTATGG ACCTGACCGT GATCGAGGGC GCCCCCCTGC CCTTCGCTTA TGACATTCTC
481 ACCACCGTGT TCGACTACGG TAACCGTGTC TTCGCCAAGT ACCCCAAGGA CATCCCTGAC
541 TACTTCAAGC AGACCTTCCC CGAGGGCTAC TCGTGGGAGC GAAGCATGAC ATACGAGGAC
601 CAGGGAATCT GTATCGCTAC AAACGACATC ACCATGATGA AGGGTGTGGA CGACTGCTTC
661 GTGTACAAAA TCCGCTTCGA CGGGGTCAAC TTCCCTGCTA ATGGCCCGGT GATGCAGCGC
721 AAGACCCTAA AGTGGGAGCC CAGTACCGAG AAGATGTACG TGCGGGACGG CGTACTGAAG
781 GGCGATGTTA ATATGGCACT GCTCTTGGAG GGAGGCGGCC ACTACCGCTG CGACTTCAAG
841 ACCACCTACA AAGCCAAGAA GGTGGTGCAG CTTCCCGACT ACCACTTCGT GGACCACCGC
901 ATCGAGATCG TGAGCCACGA CAAGGACTAC AACAAAGTCA AGCTGTACGA GCACGCCGAA
961 GCCCACAGCG GACTACCCCG CCAGGCCGGC TAA
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Fig. S2. The amino acid (top) and nucleotide (bottom) sequences of the $SH2_{Abl}$-GFP reporter protein. The $SH2_{Abl}$ portion of the protein is colored blue, and the GFP portion is colored green.

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Supplementary Figure 3

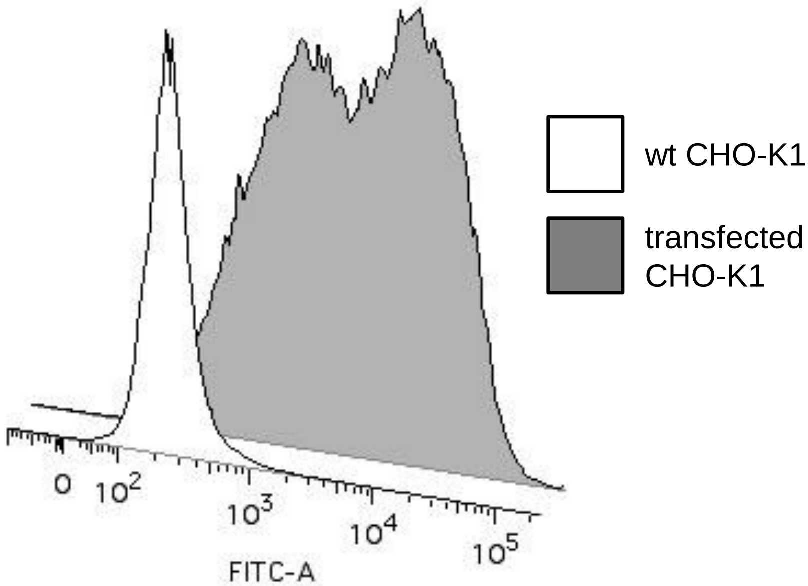

Fig. S3. Receptor expression analyzed by flow cytometry. Live cells were treated with anti-CAIV antibody and analyzed for their expression of the receptor. As shown here, the receptor is expressed well and trafficked to the membrane in the appropriate direction.

Supplementary Figure 4

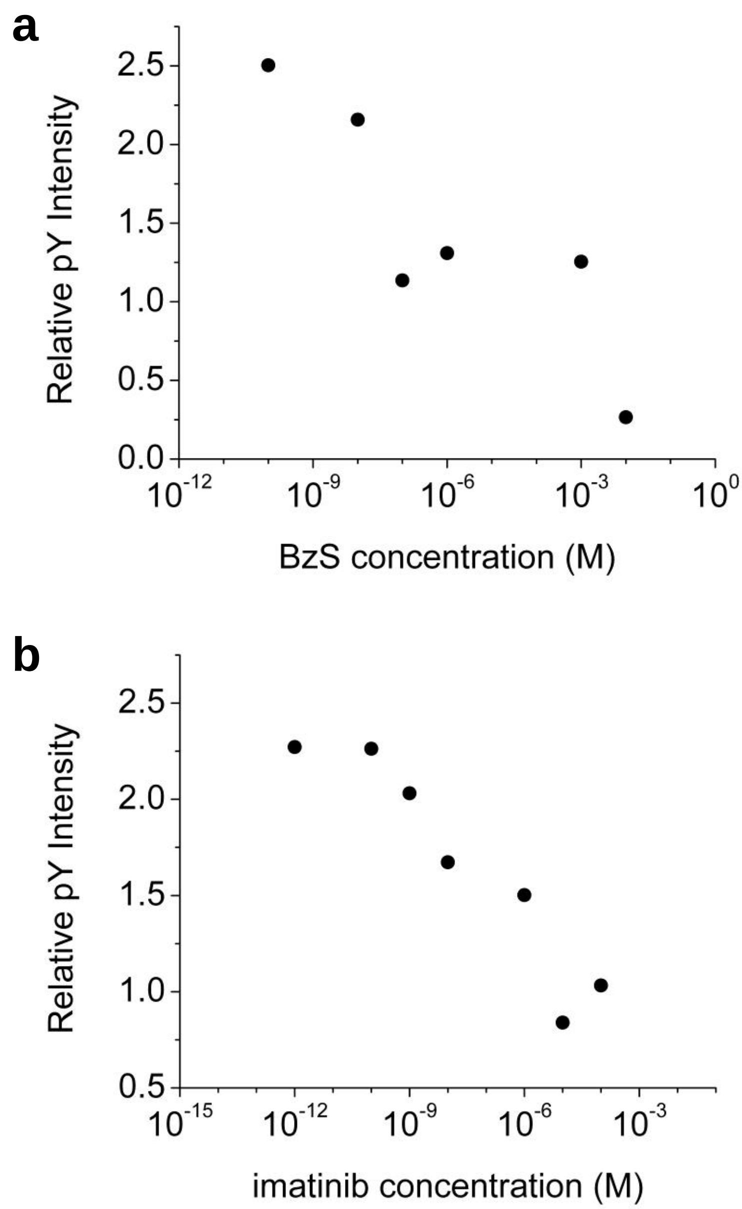

Figure S4. Dose dependence of inhibition. Receptor expressing cells were treated with either soluble BzS (**a**) or imatinib (**b**) in the presence of beads. Phosphorylation was reduced in a dose dependent fashion.