SmCSox9EX(Mw: 58.406kDa)

MNLLDPFMKMTDEQEKGLSGAPSPTMSEDSAGSPCPSGSGSDTENTRPQENTFPKGEPDLKKESEEDKFPVCI
REAVSQVLKGYDWTLVPMPVRVNGSSKNKPHVKRPMNAFMVWAQAARRKLADQYPHLHNAELSKTLGKLWRLL
NESEKRPFVEEAERLRVQHKKDHPDYKYQPRRRKSVKNGQAEAEEATEQTHISPNAIFKALQADSPHSSSGMS
EVHSPGEHSGQSQGPPTPPTTPKTDVQAGKVDLKREGRPLAEGGRQPPIDFRDVDIGELSSDVISNIETFDVN
EFDQYLPPNGHPGVPATHGQVTYTGSYGISSTAPTPATAGHVWMSKQQAPPPPQQPPQAPQAPQAPPQQQAP
PQQPQAPQQQQAHTLTTLSSEPGQSQRTHIKTEQLSPSHYSEQQQHSPQQISYSPFNLPHYSPSYPPITRSQY
DYADHQNSGSYYSHAAGQGSGLYSTFTYMNPAQRPMYTPIADTSGVPSIPQTHSPQHWEQPVYTQLTRPGSSG
GGGSGGGGSSG**VTGYRLFEEIL***

SmNSox9(Mw: 59.052kDa)

MVTGYRLFEEILGSSGGGGSGGGGSSGGAQGNSMNLLDPFMKMTDEQEKGLSGAPSPTMSEDSAGSPCPSGSG
SDTENTRPQENTFPKGEPDLKKESEEDKFPVCIREAVSQVLKGYDWTLVPMPVRVNGSSKNKPHVKRPMNAFM
VWAQAARRKLADQYPHLHNAELSKTLGKLWRLLNESEKRPFVEEAERLRVQHKKDHPDYKYQPRRRKSVKNGQ
AEAEEATEQTHISPNAIFKALQADSPHSSSGMSEVHSPGEHSGQSQGPPTPPTTPKTDVQAGKVDLKREGRPL
AEGGRQPPIDFRDVDIGELSSDVISNIETFDVNEFDQYLPPNGHPGVPATHGQVTYTGSYGISSTAPTPATAG
HVWMSKQQAPPPPQQPPQAPQAPQAPPQQQAPPQQPQAPQQQQAHTLTTLSSEPGQSQRTHIKTEQLSPSHY
SEQQQHSPQQISYSPFNLPHYSPSYPPITRSQYDYADHQNSGSYYSHAAGQGSGLYSTFTYMNPAQRPMYTPI
ADTSGVPSIPQTHSPQHWEQPVYTQLTRP*

LgCSox9EX(Mw: 74.665kDa)

MNLLDPFMKMTDEQEKGLSGAPSPTMSEDSAGSPCPSGSGSDTENTRPQENTFPKGEPDLKKESEEDKFPVCI
REAVSQVLKGYDWTLVPMPVRVNGSSKNKPHVKRPMNAFMVWAQAARRKLADQYPHLHNAELSKTLGKLWRLL
NESEKRPFVEEAERLRVQHKKDHPDYKYQPRRRKSVKNGQAEAEEATEQTHISPNAIFKALQADSPHSSSGMS
EVHSPGEHSGQSQGPPTPPTTPKTDVQAGKVDLKREGRPLAEGGRQPPIDFRDVDIGELSSDVISNIETFDVN
EFDQYLPPNGHPGVPATHGQVTYTGSYGISSTAPTPATAGHVWMSKQQAPPPPQQPPQAPQAPQAPPQQQAP
PQQPQAPQQQQAHTLTTLSSEPGQSQRTHIKTEQLSPSHYSEQQQHSPQQISYSPFNLPHYSPSYPPITRSQY
DYADHQNSGSYYSHAAGQGSGLYSTFTYMNPAQRPMYTPIADTSGVPSIPQTHSPQHWEQPVYTQLTRPGSSG
GGGSGGGGSSG**VFTLEDFVGDWEQTAAYNLDQVLEQGGVSSLLQNLAVSVTPIQRIVRSGENALKIDIHVIIP
YEGLSADQMAQIEEVFKVVYPVDDHHFKVILPYGTLVIDGVTPNMLNYFGRPYEGIAVFDGKKITVTGTLWNG
NKIIDERLITPDGSMLFRVTINS***

LgNSox9(Mw: 75.311kDa)

MVFTLEDFVGDWEQTAAYNLDQVLEQGGVSSLLQNLAVSVTPIQRIVRSGENALKIDIHVIIPYEGLSADQMA
QIEEVFKVVYPVDDHHFKVILPYGTLVIDGVTPNMLNYFGRPYEGIAVFDGKKITVTGTLWNGNKIIDERLIT
PDGSMLFRVTINSGSSGGGGSGGGGSSGGAQGNSMNLLDPFMKMTDEQEKGLSGAPSPTMSEDSAGSPCPSGS
GSDTENTRPQENTFPKGEPDLKKESEEDKFPVCIREAVSQVLKGYDWTLVPMPVRVNGSSKNKPHVKRPMNAF
MVWAQAARRKLADQYPHLHNAELSKTLGKLWRLLNESEKRPFVEEAERLRVQHKKDHPDYKYQPRRRKSVKNG
QAEAEEATEQTHISPNAIFKALQADSPHSSSGMSEVHSPGEHSGQSQGPPTPPTTPKTDVQAGKVDLKREGRP
LAEGGRQPPIDFRDVDIGELSSDVISNIETFDVNEFDQYLPPNGHPGVPATHGQVTYTGSYGISSTAPTPATA
GHVWMSKQQAPPPPPQQPPQAPQAPQAPPQQQAPPQQPQAPQQQQAHTLTTLSSEPGQSQRTHIKTEQLSPSH
YSEQQQHSPQQISYSPFNLPHYSPSYPPITRSQYDYADHQNSGSYYSHAAGQGSGLYSTFTYMNPAQRPMYTP
IADTSGVPSIPQTHSPQHWEQPVYTQLTRP*

SmNSUMO1(Mw: 13.959kDa)

MVTGYRLFEEILGSSGGGGSGGGGSSMSDQEAKPSTEDLGDKKEGEYIKLKVIGQDSSEIHFKVKMTTHLKKL
KESYCQRQGVPMNSLRFLFEGQRIADNHTPKELGMEEEDVIEVYQEQTGGHSTV*

LgNSUMO1(Mw: 30.218kDa)

MVFTLEDFVGDWEQTAAYNLDQVLEQGGVSSLLQNLAVSVTPIQRIVRSGENALKIDIHVIIPYEGLSADQMA
QIEEVFKVVYPVDDHHFKVILPYGTLVIDGVTPNMLNYFGRPYEGIAVFDGKKITVTGTLWNGNKIIDERLIT
PDGSMLFRVTINSGSSGGGGSGGGGSSMSDQEAKPSTEDLGDKKEGEYIKLKVIGQDSSEIHFKVKMTTHLKK
LKESYCQRQGVPMNSLRFLFEGQRIADNHTPKELGMEEEDVIEVYQEQTGGHSTV*

Supplemental information

Deduced amino acid sequences of NanoBiT fusion constructs which were shown in Figure 1B. Underlines indicate linker sequence and Bold characters indicate Sm/LgBiT sequence.