

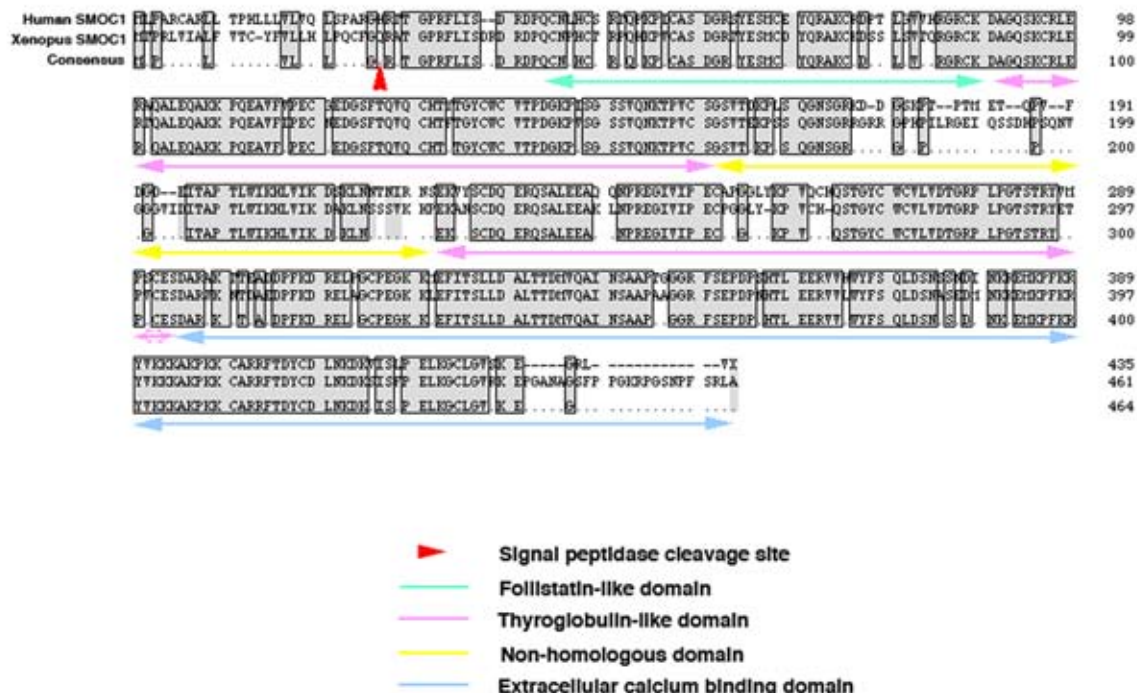
Supplementary Fig. S1

Diagram showing the alignment and conservation of domain structure between Human and *Xenopus* SMOC-1. Full-length amino acid sequences were analyzed using GeneWorks® Version 2.2 (IntelliGenetics, Inc) software.

Supplementary Fig. S2

Rescue of XSMOC-1 antisense morpholino-injected embryos by *Zebrafish* SMOC-2. **(A)** Sequence comparison of the XSMOC-1 morpholino sequence with the corresponding sequence in *Zebrafish* SMOC-2, showing lack of identity. **(B-D)** Embryos injected bilaterally at the two-cell stage with **(B)** 6ng XSMOC-1 control morpholino, **(C)** 6ng XSMOC-1 antisense morpholino or **(D)** 6ng XSMOC-1 antisense morpholino + 300pg *Zebrafish* SMOC-2 mRNA and incubated until stage 32. In three independent experiments, embryos co-injected with *Zebrafish* SMOC-2 and XSMOC-1 antisense morpholino (n = 158) neurulated, developed axes, and were either rescued partially (52%) or completely (10%).

Supplementary Figure 1



Supplementary Figure 2

A

Xenopus SMOC-1
Zebrafish SMOC-2

CCTGTATAAG**A**AGAG**G**CAAC**A**T**G**AC
GCTTCTGGGG**A**GCT**G**CGAG**G**A**T**G**C**G

