

## Supplemental material

JCB

Ishikawa et al., <https://doi.org/10.1083/jcb.201609100>

## Type VIII collagen

723aa, 145 G-X-Y repeats

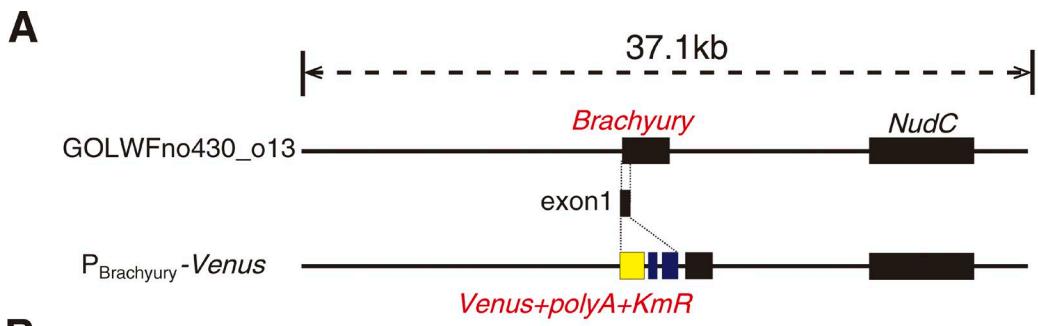
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 GIGLPGQPGHKGGLPGPGCAGPRGLPFGKPGNGAPGPGPKGDKGYPGETGQP  
 GQPGEDGQPGPPGIPGLCKPGQNGLPGQPGMPGGKGHPGPTGLPKPGLPLGK  
 GLPGPKGDKGIIGPGLPGPKGDKGHGGLPGMLGSPGLNGPPGPPGLMGP  
 PGSKGEDCAGPRGLDGAKGDKDQGLPGLPDNGLPGDPGEPPGRSPGVIGPKGEV  
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 TGPPGPPIAENGSPGVPGPIGAPGREGSPGTAQQPGQPGPFPGPVPGFSP  
 AGVLSEMGPGLDGVKAGSYAKKSKYGENGAEVMGVSGLEMPAFTAITTPFPV  
 SPVIFDKLILYNGRQNYDPQTGIFTCDVPGIYYFAYHIHCKGTNVWVALRNNE  
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 M

## Type II collagen

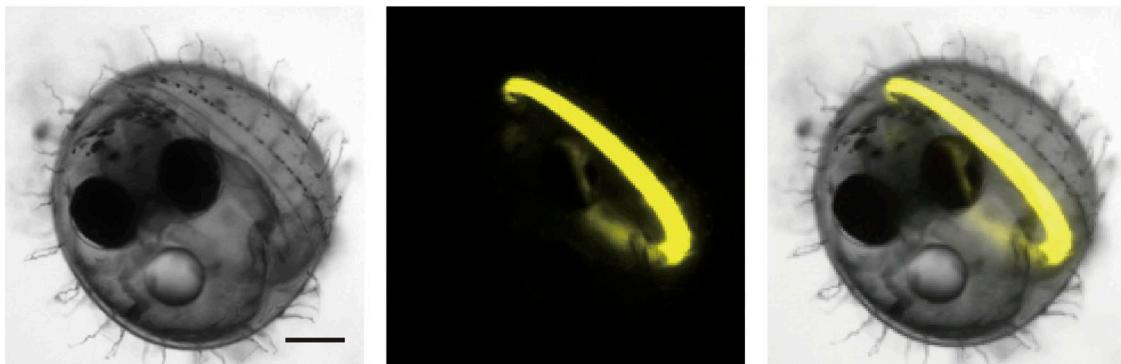
1,493aa, 360 G-X-Y repeats

MFSLVDSRTVLLVASQVLLSVVRQCEDDVNLQDAGACIQDEQQYNNKDVWKPE  
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 RHVVVKQVVGPKGPPGPMGPQGEQQPRGEAGAKGDKGPNPGRGRDGEPPGTPGNPG  
 PPGPPGPQGPGLGGNFAAQMAGGSDEKAGGAQMGVMQGPMGPMGPRGPPGPG  
 APGPQGPQGPQGPGLGGNFAAQMAGGSDEKAGGAQMGVMQGPMGPMGPRGPPGPG  
 QGARGFPGTPGLPGIKGHRGHPGLDGAGETGAAAKGEAGASGENGAPGPMPGR  
 GLPGERGRPGAAAGAARGNDGLPGLPAQPPGPVPGPAGAPGPFPQGPAGKGEA  
 LRGAFCGPQGPGRGEATGPQSPGPAGASGNPQTIDGIPGAKGSAGAPGIAGAP  
 GPPGPQGATGPGLPKQGSQDPGLPGFKGEVGPVGPQGPQGPAGEEGKRG  
 ARGEPTGTAQPLGPQGPGRGPQGNRFQGQDGLAGAKGAPGDRGVAGALS  
 PGRTGEPLGPGLGARGLTGRPGDAGPQGVKQPTGASGEDGRPGPPGPQGAR  
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 PPGPPGPQGPQGPQGPQGPQGPQGPQGPQGPQGPQGPQGP  
 NSQIENMRSPDGTQKNPARTCRDLKLCHPEWKSGDFWIDPNLGCTADA  
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 YMDQATGNLKKALVLQGSNDV  
 EIRAEGNSRF  
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 TMTKTSRL  
 PIVDIAPMDIG  
 GADQEF  
 GVDIGPVC  
 FL

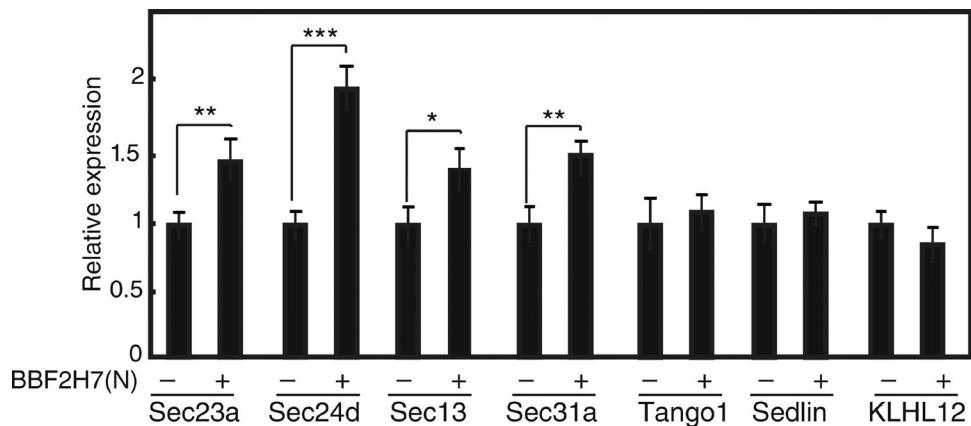
**Figure S1. Comparison of type VIII collagen with type II collagen.** The Gly-X-Y (G-X-Y) motifs are highlighted with green and yellow. Breaks consisting of two amino acids within Gly-X-Y repeats in type VIII collagen are indicated in purple.



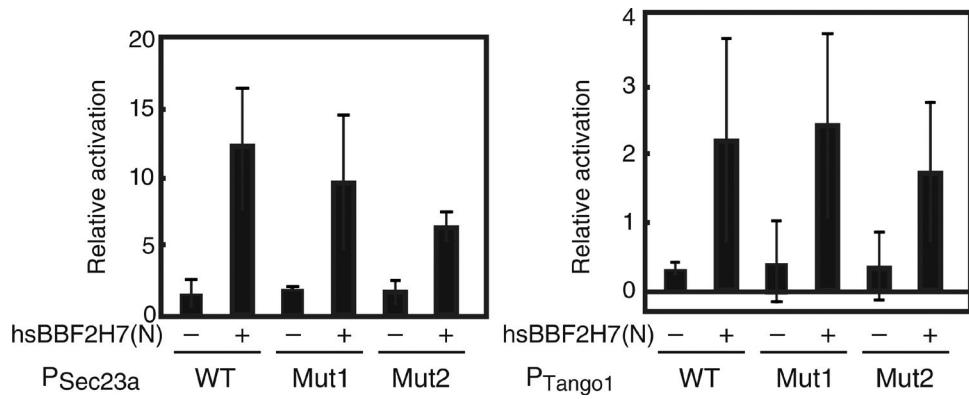
**B**



**Figure S2. Construction of a transgenic line expressing  $P_{\text{Brachyury}}\text{-Venus}$ .** (A) Schematic structures of the insert in the fosmid vector GOLWFno430\_o13 and the construct, which was microinjected into one cell-stage embryos to create a transgenic line expressing Venus under the control of the *brachyury* promoter ( $P_{\text{Brachyury}}\text{-Venus}$ ). (B) Microscopic and fluorescence microscopic analysis of WT medaka expressing  $P_{\text{Brachyury}}\text{-Venus}$  at 6 dpf. Bar, 250  $\mu\text{m}$ .



**Figure S3. Effect of overexpression of BBF2H7(N) on transcription in HCT116 cells.** Quantitative RT-PCR analysis of expression levels of genes involved in the formation of enlarged COPII vesicles relative to the expression level of GAPDH in human HCT116 cells 24 h after transfection (+) of plasmid to express human BBF2H7(N) ( $n = 3$ ). Each value in the absence (-) of BBF2H7(N) transfection is set to 1. Data presented are means  $\pm$  SD. \*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ; \*\*\*,  $P < 0.001$ .



**Figure S4. Effect of overexpression of human *BBF2H7(N)* on WT and mutant promoters of medaka *Sec23a* and *Tango1* genes.** A reporter luciferase assay was performed with (+) or without (−) microinjection of 50 ng/μl human *BBF2H7(N)* mRNA, as described in the Luciferase assay section of the Materials and methods. Data presented are means ± SD.

Table S1. Sequences of primers used for quantitative RT-PCR

Gene name	Direction	Primer sequence
<i>olSec23a</i>	Fw	5'-TGCCGAGATACTCGACACG-3'
	Rv	5'-GGTCTGTGACGGGTTGACTT-3'
<i>olSec24d</i>	Fw	5'-GACAGCTTGGTGGAGGAC-3'
	Rv	5'-GCCTGATCTCTCTGAGC-3'
<i>olSec13</i>	Fw	5'-TCACTGGAACATTCTGCC-3'
	Rv	5'-CACTGACCCCATCGACTC-3'
<i>olSec31a</i>	Fw	5'-ACGACAAACTGAGGGAGCAG-3'
	Rv	5'-CCTCGATGCTCTGGTATG-3'
<i>olSec31b</i>	Fw	5'-CAGGAAAACGTTGGGCAC-3'
	Rv	5'-CTCGTGGAGTCATTAGGA-3'
<i>olTango1</i>	Fw	5'-CAAAAGTCCAAAAAGAAGTGG-3'
	Rv	5'-GCCAGAACCTGGACAGA-3'
<i>olcTage5</i>	Fw	5'-GCAAGACTCTCCCCCAGAG-3'
	Rv	5'-CTCCGCTGTGCTCCATCT-3'
<i>olSedlin</i>	Fw	5'-ACGAGTGGTTGTCTCAGCT-3'
	Rv	5'-AATCCCATTTCTGCTGCCA-3'
<i>olCUL3a-1</i>	Fw	5'-AATATCCCCATGCCACG-3'
	Rv	5'-TTGTCTCCACTGTGTTAC-3'
<i>olCUL3a-2</i>	Fw	5'-CTTCAAACGTGACAGGGTC-3'
	Rv	5'-TCTGGTCTCTTCCGCTCAG-3'
<i>olKLHL12</i>	Fw	5'-GGCGGACTTTATGCCATTGC-3'
	Rv	5'-CCAGGAGTCAACAATGGGT-3'
<i>olPEF1</i>	Fw	5'-CAATGAGGAGACCTGCCTCA-3'
	Rv	5'-CCGAGAACCGTACAAGTCT-3'
<i>olALG2</i>	Fw	5'-CCATTGACTGGCTGGAGGAG-3'
	Rv	5'-AGATGCCTGCACTGAACTGG-3'
<i>olSLY1</i>	Fw	5'-GCTGCAGCGAACTTCAAC-3'
	Rv	5'-GAGGTCTGAAGGTCTCGTT-3'
<i>olSTX5</i>	Fw	5'-TGGCACACATGGTCAAGGAG-3'
	Rv	5'-GCAGCCTCACGTTAGTTG-3'
<i>olSTX17</i>	Fw	5'-ACAGCCTCAACCAATGTGGA-3'
	Rv	5'-CAGCACCCCAACTTGTAG-3'
<i>olSTX18</i>	Fw	5'-AGTTGGTCAGTGAGATGAGC-3'
	Rv	5'-GTCGTAAATCTCCACCACCT-3'
<i>olRab10</i>	Fw	5'-GCCAACATCAACATCGAGAA-3'
	Rv	5'-ACTGTTGGCTCTTTACGG-3'
<i>olhsp47</i>	Fw	5'-TCCCTCCCCAAAGTCTCTGT-3'
	Rv	5'-ATTGTCCACAGCCTCGGTT-3'
<i>olCol2a1-1</i>	Fw	5'-CAGCCAGGTGTATGGGATTG-3'
	Rv	5'-CTGCTGAGAAAGGACTTCTGGAG-3'
<i>olCol2a1-2</i>	Fw	5'-AGGTGCTCTGGAAAGGATG-3'
	Rv	5'-CTGGACCTAACGGTGCAG-3'
<i>olβ-actin</i>	Fw	5'-CGGTATCCATGAGACCACT-3'
	Rv	5'-AGCACAGTGTGGCTACAG-3'
<i>hsSec23a</i>	Fw	5'-TCCTCTTTCAAAAGTCAACCT-3'
	Rv	5'-TGTAAAGATAGGTGCTCCAGACT-3'
<i>hsSec24d</i>	Fw	5'-TGGGTATTATCCAACAAAAGAGGC-3'
	Rv	5'-CCATTTCTGTTCTCCGCTG-3'
<i>hsTango1</i>	Fw	5'-CTCAGCTCTGGGACCTTT-3'
	Rv	5'-TTAACCTAGTGGTGGACGC-3'
<i>hsSedlin</i>	Fw	5'-CAACGAGTGGTTGTGTCGG-3'
	Rv	5'-TCTTCTTCTTTATGTCATGAAGCA-3'
<i>hsSec13</i>	Fw	5'-CTGGTCCATCACAGCCAACA-3'
	Rv	5'-CCACTGCCCATCAACTGACT-3'
<i>hsSec31a</i>	Fw	5'-TGATGCCAGAACGTTGG-3'
	Rv	5'-ACCACTGGTATTGTTGGTGA-3'
<i>hsKLHL12</i>	Fw	5'-CGGGGAGACTCTATGCAAT-3'
	Rv	5'-AGCTGTCGATGATAGGGTCA-3'
<i>hsGAPDH</i>	Fw	5'-GACCCCTTCAATTGACCTCAA-3'
	Rv	5'-TTGACGGTGCCTATGAAATT-3'

Fw, forward; Rv, reverse.