

# **Calsequestrin 1 is an active partner of stromal interaction molecule 2 in skeletal muscle**

**Seung Yeon Jeong<sup>1,2</sup>, Mi Ri Oh<sup>1,2</sup>, Jun Hee Choi<sup>1,2</sup>, Jin Seok Woo<sup>3</sup>, and Eun Hui Lee<sup>1,2,\*</sup>**

<sup>1</sup>Department of Physiology, College of Medicine, The Catholic University of Korea, Seoul 06591; <sup>2</sup>Department of Biomedicine & Health Sciences, Graduate School, The Catholic University of Korea, Seoul 06591;

<sup>3</sup>Department of Physiology, David Geffen School of Medicine, UCLA, Los Angeles, CA 10833, USA;

\*Correspondence: Eun Hui Lee (ehui@catholic.ac.kr)

## **List of Supplementary Materials**

**Supplementary Table S1.** PCR primers for the cloning of GST-CASQ1 or GST-CASQ1 regions (GST-A to GST-E)

**Supplementary Table S2.** PCR primers for the cloning of GST-C regions (GST-C1 to GST-C5)

**Supplementary Table S3.** PCR primers for the cloning of the C1 region into the pCMS-RFP vector

**Supplementary Table S4.** Expression level of the proteins that mediate or regulate EC coupling, SOCE, or myotube differentiation in the WT CASQ1 or C1-expressing mouse primary skeletal myotubes.

# Supplementary Table S1

PCR primers for the cloning of GST-CASQ1 or GST-CASQ1 regions (GST-A to GST-E)

	PCR primers (EcoR I & Xho I)	
GST-CASQ1	Forward	5' – GGAATTCATGGGGGCCAGAGCAGTG – 3'
	Backward	5' – CGCTCGAGCTAGTCGTCGTCATCATC – 3'
GST-A	Forward	5' – GGAATTCATGGGGGCCAGAGCAGTG – 3'
	Backward	5' – CGCTCGAGCTACATCTCCATCCATATG – 3'
GST-B	Forward	5' – GGAATTCGATAACGAGGAGGACCTG – 3'
	Backward	5' – CGCTCGAGCTAGTCGTCGTCATCATC – 3'
GST-C	Forward	5' – GGAATTCATGGGGGCCAGAGCAGTG – 3'
	Backward	5' – CGCTCGAGCTAAATCAACTCTACAG – 3'
GST-D	Forward	5' – GGAATTCGAAGGTGAACGAGAGC – 3'
	Backward	5' – CGCTCGAGCTACTCTAAGAACTC – 3'
GST-E	Forward	5' – GGAATTCACTCTCAAGGCTGTGG – 3'
	Backward	5' – CGCTCGAGCTAGTCGTCGTCATCATC – 3'

## Supplementary Table S2

**PCR primers for the cloning of GST-C regions (GST-C1 to GST-C5)**

	PCR primers (EcoR I & Xho I)	
GST-C1	Forward	5' – GGAATTCATGGGGGCCAGAGCAGTG – 3'
	Backward	5' – CGCTCGAGCTACAGGATTAG – 3'
GST-C2	Forward	5' – GGAATTCGAGTTAGCAG – 3'
	Backward	5' – CGCTCGAGCTAAATCAACTCTACAG – 3'
GST-C3	Forward	5' – GGAATTCATGGGGGCCAGAGCAGTG – 3'
	Backward	5' – CGCTCGAGCTAATCCTTCTCTGAGTC – 3'
GST-C4	Forward	5' – GGAATTCGCAGCTGTGGCCAAGAAA – 3'
	Backward	5' – CGCTCGAGCTACTCGCCGTCATATTC – 3'
GST-C5	Forward	5' – GGAATTCTTTTCTGCAGAC – 3'
	Backward	5' – CGCTCGAGCTAAATCAACTCTACAG – 3'

# Supplementary Table S3

PCR primers for the cloning of the C1 region into the pCMS-RFP vector

	PCR primers (EcoR I & Sal I)	
C1 region	Forward	5'- GGAATTCATGGGGGCCAGAGCAGTG -3'
	Backward	5'- GCGTCGACTCACAGGATTAGCTCC -3'

## Supplementary Table S4

**Expression level of the proteins that mediate or regulate EC coupling, SOCE, or myotube differentiation in the WT CASQ1 or C1-expressing mouse primary skeletal myotubes.**  $\alpha$ -actin was used as a loading control. Three independent experiments per protein were conducted. The values are presented as the mean  $\pm$  SEM for three independent experiments. The expression level of protein was normalized to the mean value of the vector control. \*Significant difference compared with vector control ( $p < 0.05$ ). #Significant difference compared with WT CASQ1 ( $p < 0.05$ ).

	Vector control	WT CASQ1	C1
MyoD	1.00 $\pm$ 0.00	1.02 $\pm$ 0.09	0.98 $\pm$ 0.06
Myogenin	1.00 $\pm$ 0.00	0.97 $\pm$ 0.07	1.00 $\pm$ 0.09
RyR1	1.00 $\pm$ 0.00	1.01 $\pm$ 0.08	0.98 $\pm$ 0.08
DHPR	1.00 $\pm$ 0.00	1.01 $\pm$ 0.13	1.02 $\pm$ 0.13
SERCA1a	1.00 $\pm$ 0.00	0.97 $\pm$ 0.15	0.97 $\pm$ 0.13
TRPC1	1.00 $\pm$ 0.00	0.98 $\pm$ 0.13	1.02 $\pm$ 0.12
TRPC3	1.00 $\pm$ 0.00	1.01 $\pm$ 0.08	0.98 $\pm$ 0.08
TRPC4	1.00 $\pm$ 0.00	1.00 $\pm$ 0.15	0.99 $\pm$ 0.13
TRPC6	1.00 $\pm$ 0.00	1.02 $\pm$ 0.09	0.71 $\pm$ 0.11 *, #
TRIM32	1.00 $\pm$ 0.00	0.97 $\pm$ 0.09	0.98 $\pm$ 0.08
Orai1	1.00 $\pm$ 0.00	1.02 $\pm$ 0.07	1.03 $\pm$ 0.04
STIM1	1.00 $\pm$ 0.00	0.98 $\pm$ 0.07	0.99 $\pm$ 0.11
STIM2	1.00 $\pm$ 0.00	1.02 $\pm$ 0.07	1.04 $\pm$ 0.09
CSQ1	1.00 $\pm$ 0.00	1.00 $\pm$ 0.07	1.01 $\pm$ 0.07
JP1	1.00 $\pm$ 0.00	0.99 $\pm$ 0.09	1.01 $\pm$ 0.07
JP2	1.00 $\pm$ 0.00	1.04 $\pm$ 0.11	0.97 $\pm$ 0.09
CaM1	1.00 $\pm$ 0.00	0.98 $\pm$ 0.08	0.61 $\pm$ 0.17 *, #