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A novel transcription factor Rwdd1 and its SUMOylation inhibit the expression of *sqr*, a key gene of mitochondrial sulfide metabolism in *Urechis unicinctus*

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Highlights

- Rwdd1 can bind directly to the promoter (+18/+36) of *U. unicinctus sqr*.
- TACG was the key binding sequence of Rwdd1.
- Rwdd1 is a transcriptional repressor of the *sqr*.
- Rwdd1 can be SUMOylated at the lysine of 90th.
- SUMOylation of Rwdd1 enhances its transcriptional inhibitory effect on *sqr*.

Abstract

Sulfide-quinone oxidoreductase (SQR) is a key enzyme of sulfide metabolism in metazoans, and responsible for oxidizing sulfide into thiosulfate and transmitting the

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