

Characterization of glutathione dithiophosphates as long-acting H₂S donors

Rezeda A. Ishkaeva ^{1,2}, Nail N. Khaertdinov ¹, Aleksey V. Yakovlev ¹, Marina V. Esmeteva ^{1,2}, Diana V. Salakhieva ^{1,2}, Ilyas S. Nizamov ^{3,4}, Guzel F. Sitdikova ^{1,*}, and Timur I. Abdullin ^{1,2}

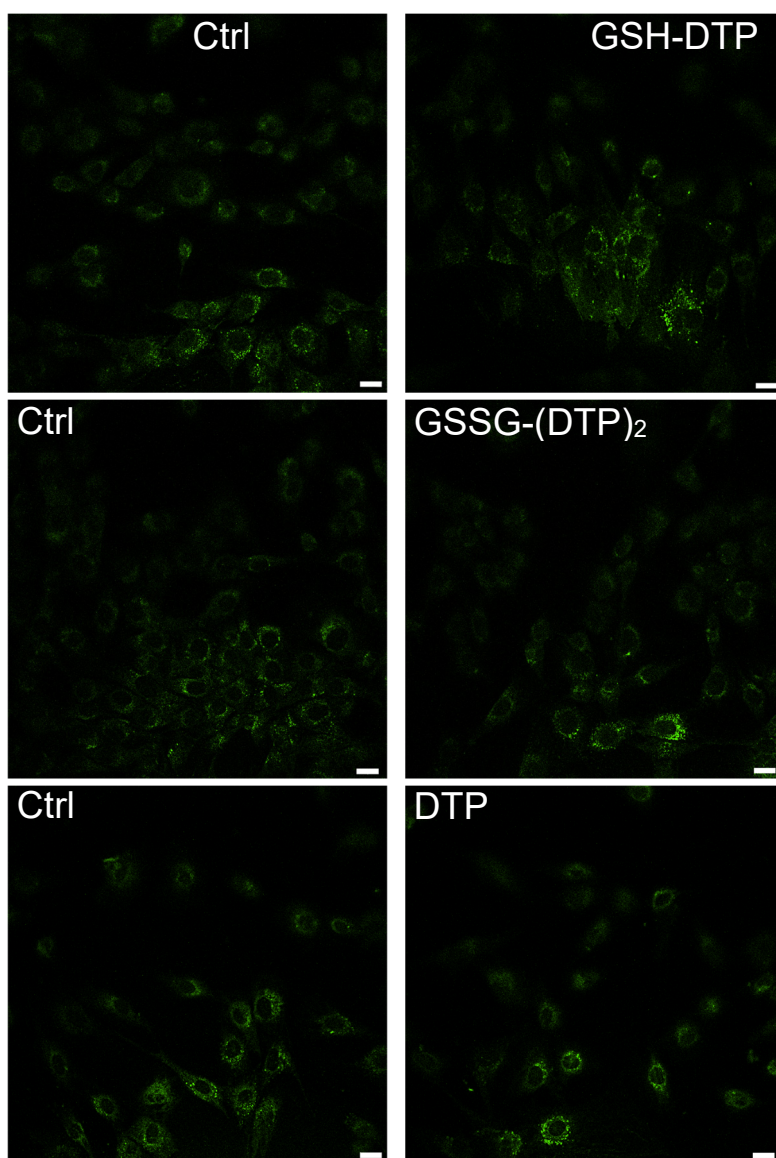
¹ Institute of Fundamental Medicine and Biology, Kazan (Volga Region) Federal University, 18 Kremlyovskaya St., 420008 Kazan, Russia

² Scientific and Educational Center of Pharmaceutics, Kazan (Volga Region) Federal University, 18 Kremlyovskaya St., 420008 Kazan, Russia

³ Alexander Butlerov Institute of Chemistry, Kazan (Volga Region) Federal University, 420008 Kazan, Russia

⁴ Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific Center of RAS, 8 Arbuzov St., 420088 Kazan, Russia

* Correspondence: guzel.sitdikova@kpfu.ru; Tel.: +7-(843)-206-52-34



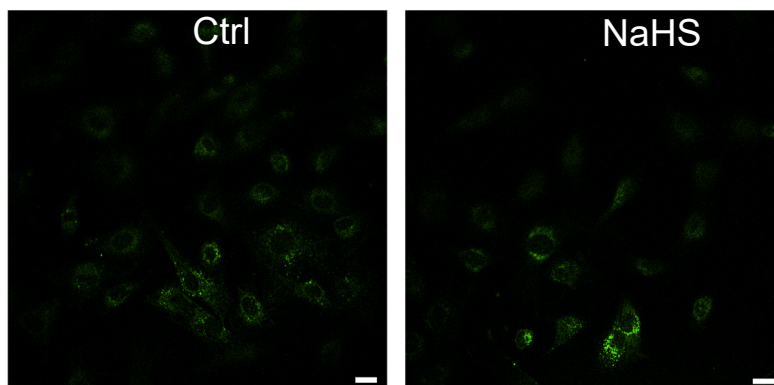


Figure S1. Effect of glutathione dithiophosphates, DTP and NaHS on H₂S level in C2C12 mioblasts according to AzMC fluorescence. Representative LSCM images of control and GSH-DTP-treated cells (scale bar = 10 μ m). The pre-stained cells were exposed to the compounds for 20 min.

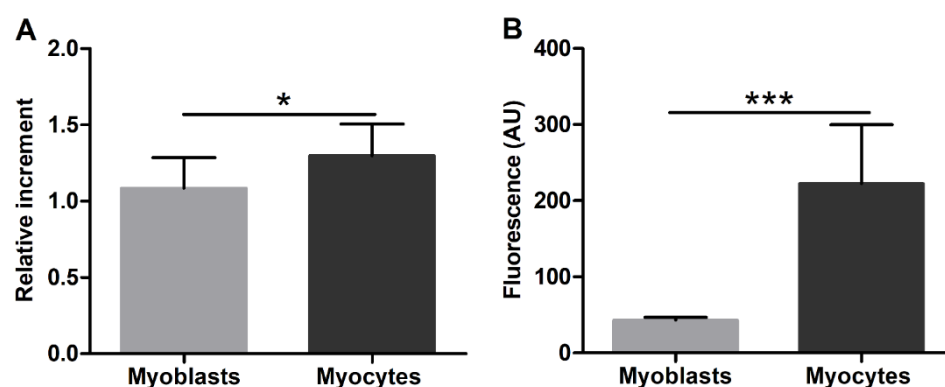


Figure S2. Relative GSH (A) and ROS (B) content in C2C12 myoblasts and C2C12 myocytes according MCB microplate assay [Ishkaeva, *et al.*, 2022] and DCFDA fluorescence. Mean \pm SD are shown (* p < 0.05, *** p < 0.001).

Citation: Ishkaeva, R.A.; Khaertdinov, N.N.; Yakovlev, A.V.; Esmeteva, M.V.; Salakhieva, D.V.; Nizamov, I.S.; Sitdikova, G.F.; Abdullin, T.I. Characterization of Glutathione Dithiophosphates as Long-Acting H₂S Donors. *Int. J. Mol. Sci.* **2023**, *24*, 11063. <https://doi.org/10.3390/ijms241311063>

Academic Editor: Sonia Melino

Received: 10 June 2023

Revised: 28 June 2023

Accepted: 30 June 2023

Published: 4 July 2023



Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

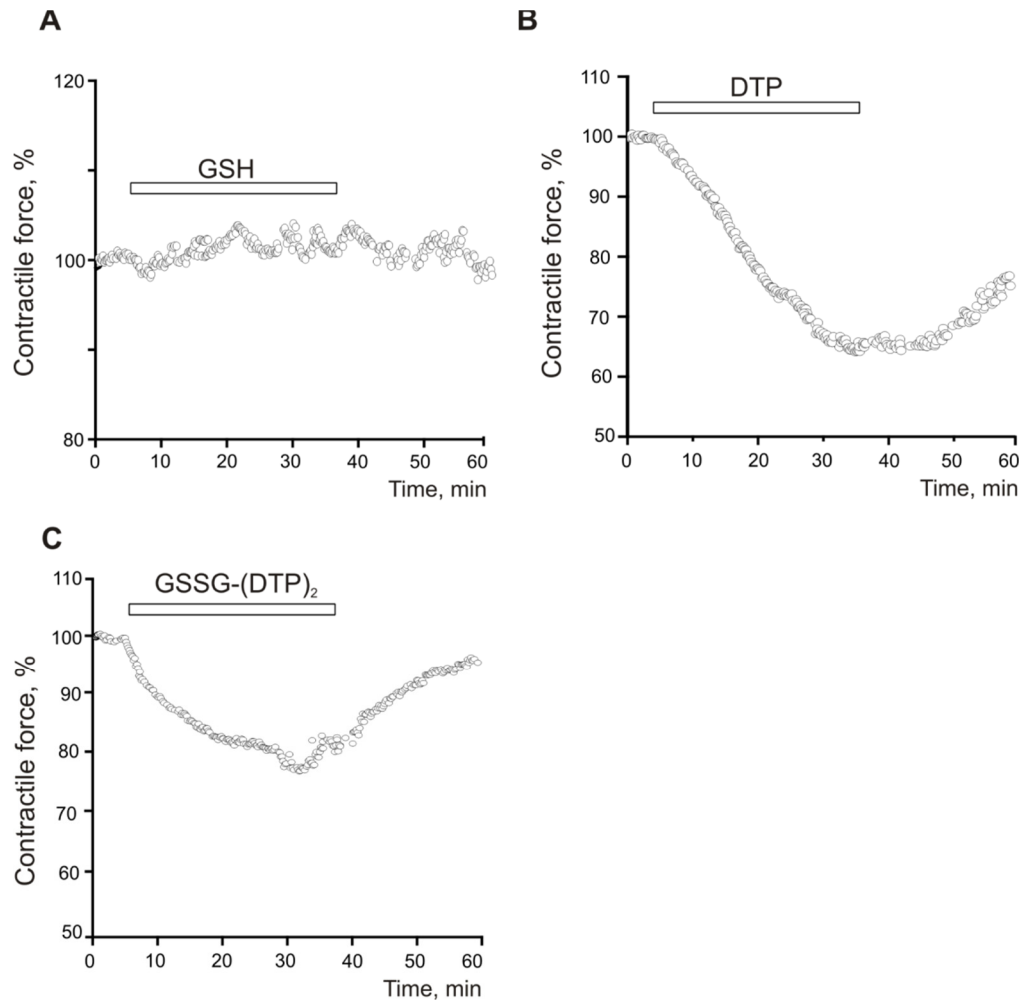


Figure S3. Effects of H₂S donors on the contractile force of rat atrium. The average time courses of negative inotropic action of 200 μM GSH (**A**), 200 μM DTP (**B**) and GSSG-(DTP)₂ (**C**) The time of application is indicated by the bar.