Supplementary information

PDI regulates seizure activity via NMDA receptor redox in rats

Ji Yang Kim^{*}, Ah-Rhem Ko^{*}, Hye-Won Hyun, Su-Ji Min, Ji-Eun Kim^{**}

Department of Anatomy and Neurobiology, Institute of Epilepsy Research, College of Medicine, Hallym University, Chuncheon 24252, South Korea.

**** Address correspondence to:** Dr. Ji-Eun Kim, Department of Anatomy and Neurobiology, Institute of Epilepsy Research, College of Medicine, Hallym University, Chuncheon, Kangwon-Do, 24252, South Korea; jieunkim@hallym.ac.kr



Supplementary Figure 1. (A) Effect of PDI knockdown on glutathionylation-mediated NMDAR redox signals. There is the glutathonylation on NR1 subunit in control siRNA- and PDI siRNA-infused animals. (B) Effect of tunicamycin on ER stress. Tunicamycin increases pPERK, pIRE1 α and GRP78 expression in the rat hippocampus, as compared to vehicle (mean ± S.E.M.; *p < 0.05 vs. normal; n = 5, respectively).

Fig. 1B



Supplementary Figure 2. Full-length gel images of western blot data in Figure 1. The cropped parts of western blots are indicated with boxes.

Fig. 2A.



Supplementary Figure 3. Full-length gel images of western blot data in Figure 2. The cropped parts of western

blots are indicated with boxes.

| Fig. 3A | IP3R | NR2A | NR2B | NR1 |
|----------|---------------|----------------|----------------|-----|
| | | | | |
| | M1R | PDI | Fig.3D ™ | т |
| l | | | | |
| Fig. 3E | NR1-TMT-thiol | NR2A-TMT-thiol | | |
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| - | 1 | | NF | *1 |
| - | | | and the second | |
| | | | - | |
| - | | | 100 | |
| <u> </u> | NR2A | PDI | W. | |
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Supplementary Figure 4. Full-length gel images of western blot data in Figure 3. The cropped parts of western blots are indicated with boxes.





Supplementary Figure 5. Full-length gel images of western blot data in Figure 4. The cropped parts of western

blots are indicated with boxes.



Supplementary Figure 6. Full-length gel images of western blot data in Figure 5. The cropped parts of western

blots are indicated with boxes.



Supplementary Figure 7. Full-length gel images of western blot data in Figure 6. The cropped parts of western blots are indicated with boxes.

Fig. 7A

| pPERK | pIRE1a | ATF6 |
|-------|--------|----------|
| | | |
| | 49 | |
| | 44 | |
| | - | |
| | | 24 · · · |
| - | | |

GRP78 β-actin



Fig. 7B

| IP3R | NR2A | NR2B | NR1 |
|-------------|----------------------|------|---------|
| | | | |
| | - | - | - |
| 40 <u> </u> | - and other to | | |
| | C All Children C St. | | |
| | | | |
| | M1R | CIB1 | β-actin |
| | | - | |

Supplementary Figure 8. Full-length gel images of western blot data in Figure 7. The cropped parts of western blots are indicated with boxes.

SFig. 1A



SFig. 1B

| PPERK | pIRE1a | GRP78 | β-actin |
|--------|---------|-------|---------|
| | <u></u> | 54 C | |
| | | 110 | |
| | 11 | | - |
| ·· | *** | - | 34 |
| 1000 C | 44 | | |
| | | | - |
| | _ | | |

Supplementary Figure 9. Full-length gel images of western blot data in Supplementary figure 1. The cropped parts of western blots are indicated with boxes.