Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

In vivo fluorescent sensing of salicylate-induced change of zinc ion in auditory cortex of rat brain

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Fig. S1

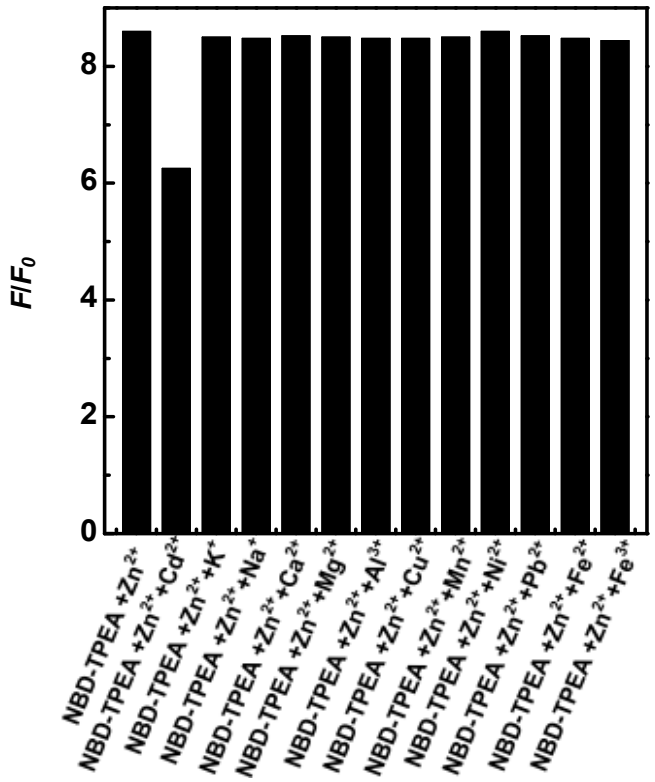

Fig. S1. Histogram of F/F_0 at 550 nm obtained by addition of different kinds of metal ions (100 μM for K^+, Na^+, Ca^{2+}, Mg^{2+}; 10 μM for other metal ions) to the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F_0 represents the fluorescent emission intensity of the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F represents the fluorescent emission intensity of mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4) with the addition of different kinds of metal ions (100 μM for K^+, Na^+, Ca^{2+}, Mg^{2+}; 10 μM for other metal ions). λ_{ex} = 469 nm.

Fig. S2

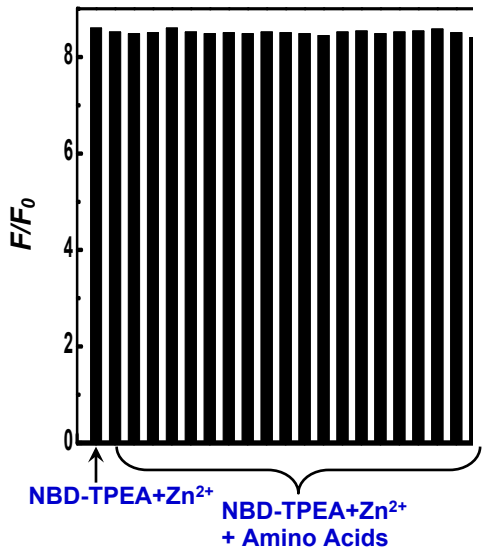

Fig. S2 Histogram of F/F_0 at 550 nm obtained by the addition of amino acids (concentrations of all amino acids were 100 μM) to the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F_0 represents the fluorescent emission intensity of the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F represents the fluorescent emission intensity of the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4) with the addition of amino acids (concentration of each amino acid was 100 μM). λ_{ex} = 469 nm.

Fig. S3

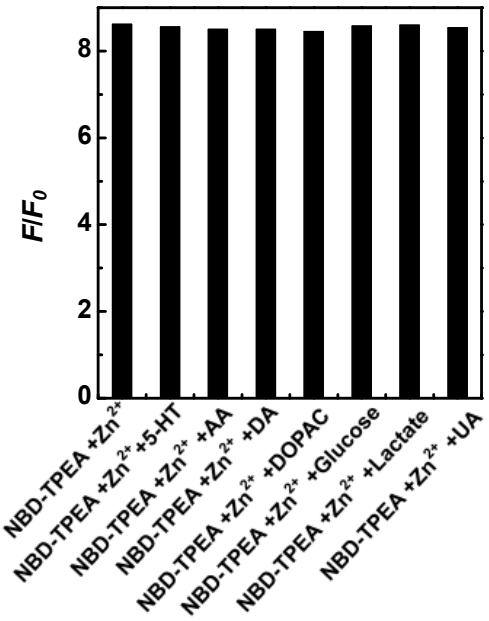

Fig. S3 Histogram of F/F_0 at 550 nm obtained by the separate addition of 5-HT (10 μM), AA (200 μM), DA (10 μM), DOPAC (10 μM), glucose (10 mM), lactate (1 mM) or UA (80 μM) to the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F_0 represents the fluorescent emission intensity of the mixture of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4). F represents the fluorescent emission intensity of the mixture solution of 10 μM of NBD-TPEA and 10 μM of Zn^{2+} in DMSO/aCSF (v/v, 1:99, pH 7.4) with the separate addition of 5-HT (10 μM), AA (200 μM), DA (10 μM), DOPAC (10 μM), glucose (10 mM), lactate (1 mM) or UA (80 μM). λ_{ex} = 469 nm.

Fig. S4

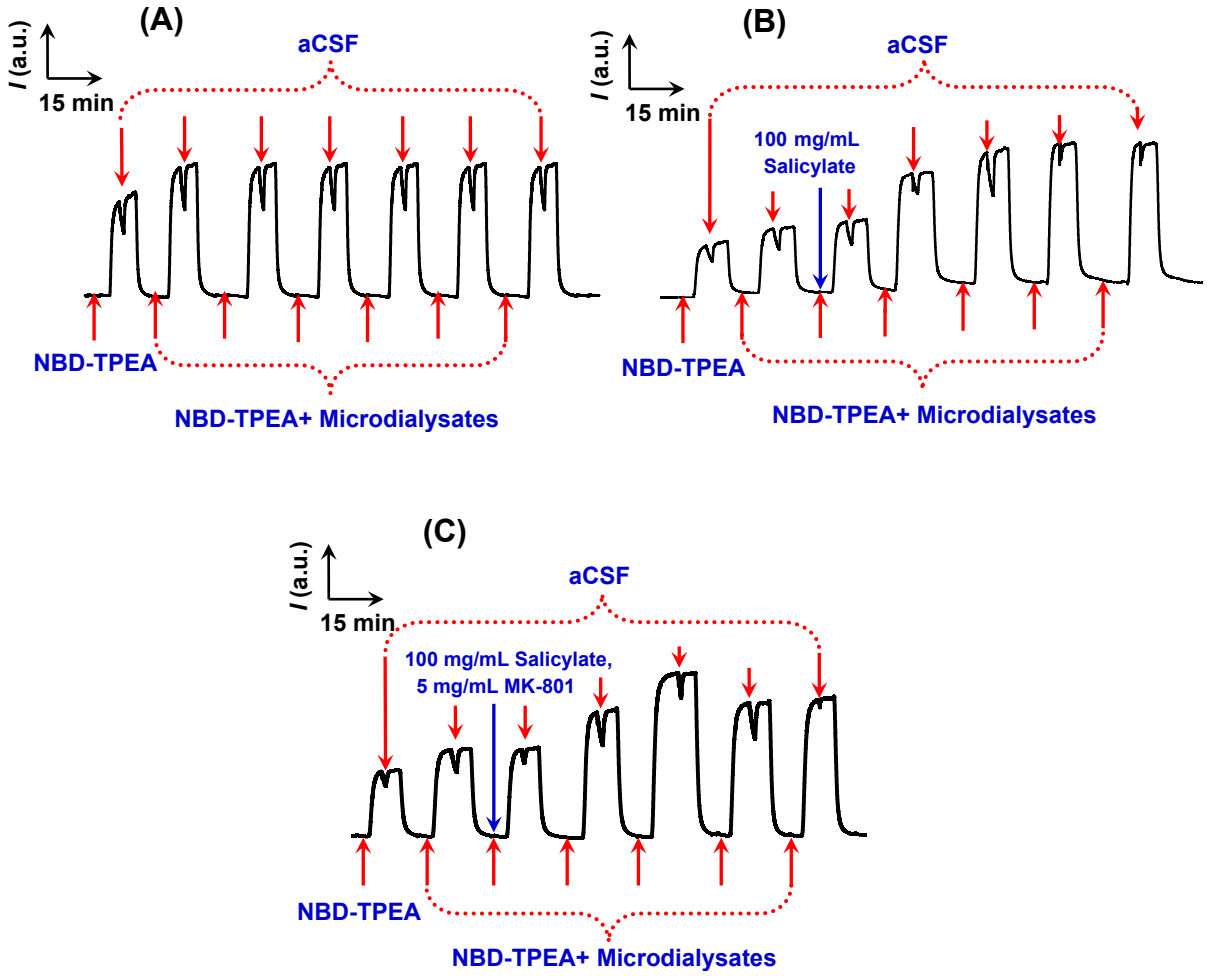

Fig. S4 Typical fluorescence-time response obtained with the method for the auditory cortex Zn^{2+} in the normal (A), salicylate (B), and Sal/MK-801 (C) groups. All brain microdialysates were pre-mixed with 30 μL of NBD-TPEA (10 μM) in DMSO/aCSF (v/v, 1:99, pH 7.4) for 5 min, and the resulting mixtures were perfused into a fluorescent cell for continuous-flow fluorescent detection. Flow rate was 3 μL min^{-1}. Other conditions were the same as those in Fig. 3.