

Supplementary materials

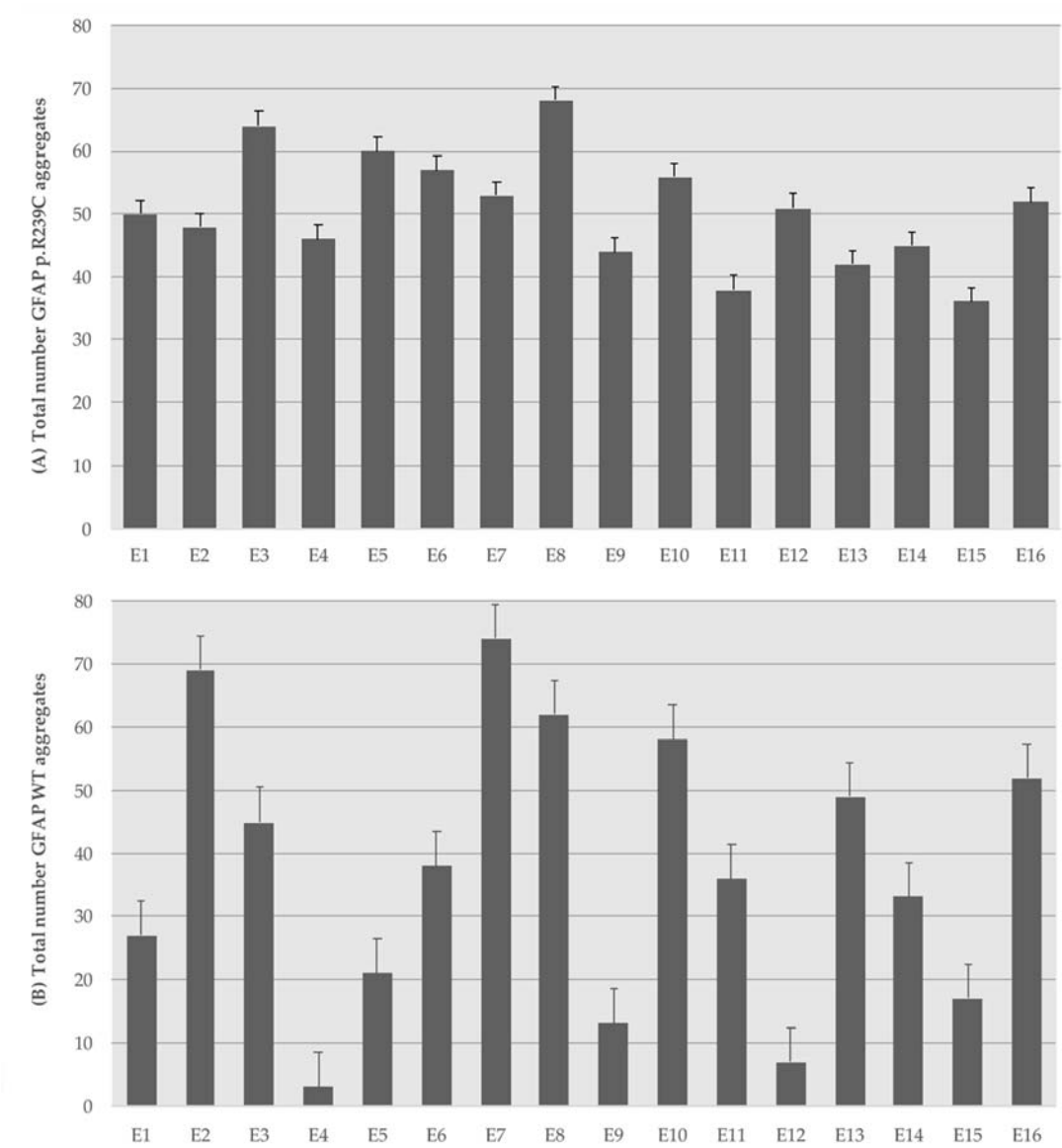


Figure S1: Aggregates quantification. The histograms represent the number of aggregates detected in (A) 16 embryos GFAP R239C-GFP and in (B) 16 embryos GFAP WT-GFP at 24 hpf, respectively. The count of the aggregates has been made by ImageJ software 1.52q and processed with Microsoft Office® Excel.

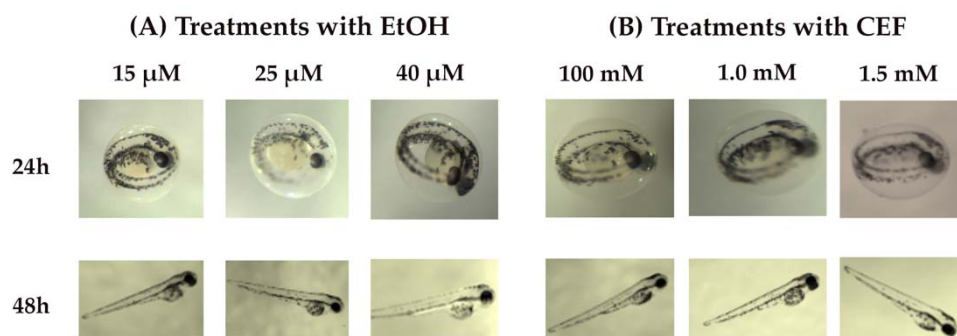


Figure S2. Tests performed to evaluate ethanol and CEF healthy concentration on embryos. Embryos have been treated for 48 hours with different concentrations of **(A)** ethanol at 15 μM , 25 μM and 40 μM . **(B)** Embryos treated with CEF at 100 mM, 1.0 mM and 1.5 mM.

(A) GFAP p.R239C Untreated		(B) GFAP p.R239C + CEF 1.0 mM	
Embryo	t48	Embryo	t48
E41	↔	E57	↓
E42	↔	E58	NO
E44	↔	E59	NO
E45	↔	E61	↔
E46	↔	E65	↔
E47	↔	E66	NO
E48	NO	E67	↓
E50	↓	E68	NO
E53	↔	E71	↔
E55	↔	E72	↓

Table S1. Effects of ceftriaxone (CEF) on p.R239C mutant embryos in one of the experiments, here shown as exemplary. **(A)** The table represents the presence of aggregates in 10 untreated mutated embryos at t0 and after 48 hours (t48). **(B)** Effect of CEF 1.0 mM, at the same exposition time, on aggregates of 10 mutated p.R239C embryos. (↔: amount of aggregates not changed, ↓: aggregates decreased, NO: no aggregates disappeared, E: embryo, followed by the code number).

(A) GFAP WT-GFP Untreated		(B) GFAP WT-GFP + CEF 1.0 mM	
Embryo	t48	Embryo	t48
E2	↔	E17	↔
E5	↓	E24	↓
E7	↓	E29	↔
E9	↔	E30	↔
E13	↔	E36	↓
E15	↔		

Table S2. Effect of ceftriaxone (CEF) 1.0 mM on GFAP WT-GFP embryos. In table **(A)** is represented the variation of aggregates number in 6 untreated GFAP WT-GFP embryos at 24 hpf and after 48h (t48), while in table **(B)** is shown the variation of aggregates number in 5 GFAP WT-GFP embryos after 48 hours of treatment with CEF 1.0 mM, from 24 hpf to 72 hpf (t48) (↔: amount of aggregates not changed, ↓: aggregates decreased, NO: no aggregates disappeared, E: embryo, followed by the code number).

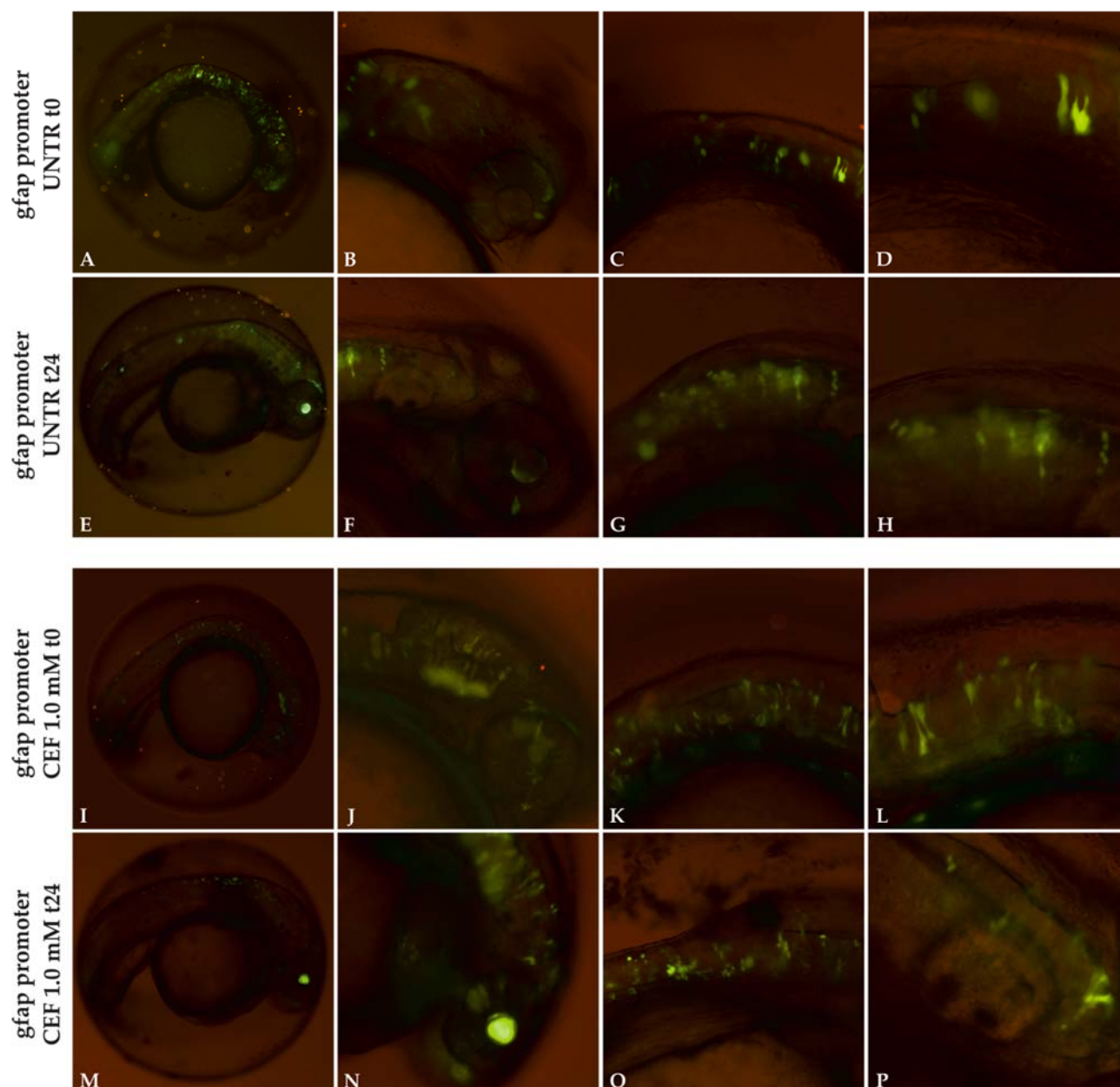


Figure S3. Effect of ceftriaxone (CEF) 1.0 mM on *gfap* promoter. Untreated embryos expressing *gfap* promoter as filamentous structures from (A) to (H) at 24 and 48 hpf, respectively. From (M) to (P) the effect of CEF 1.0 mM treatments on *gfap* promoter in embryos at 48 hpf, respect to t0 from (I) to (L) at 24 hpf. Magnification: 4X (A, E, J, M); 10X (B, C, F, G, J, K, N, O) and 20X (D, H, L, P).

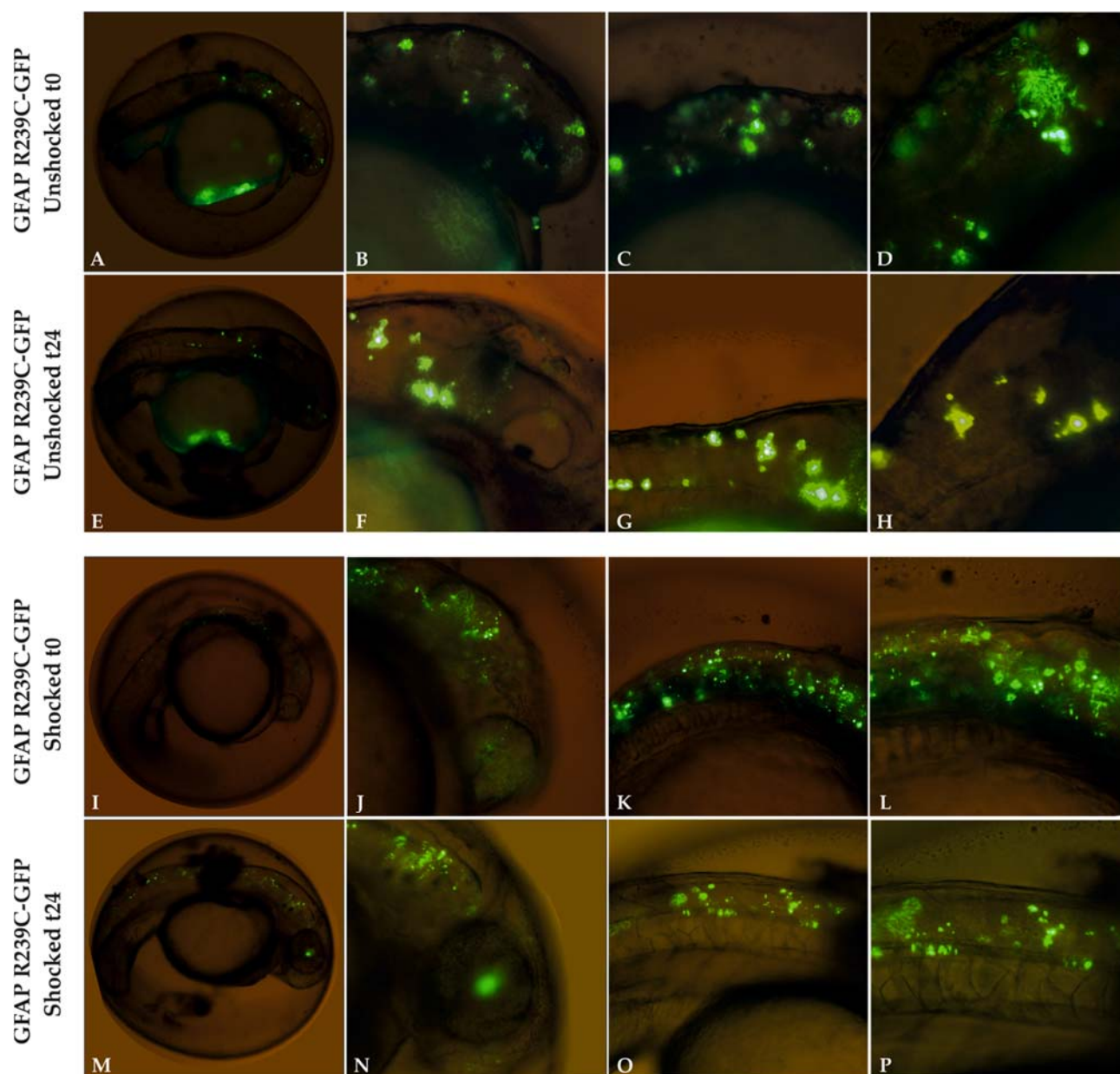


Figure S4. Effects of thermal shock on p.R239C aggregates. In figures from (A) to (H), mutated embryos showing diffuse aggregates formation at 24 hours after microinjection (t0) and after 24 hours. Figures from (I) to (L) show GFAP p.R239C aggregates in embryos at 24 hours after microinjection (t0), while figures (M) to (P) show the reduction of GFAP p.R239C aggregates in the same embryo at 48 hours after the end of the thermal sock (t48). Magnification: 4X (A, E, J, M); 10X (B, C, F, G, J, K, N, O) and 20X (D, H, L, P).

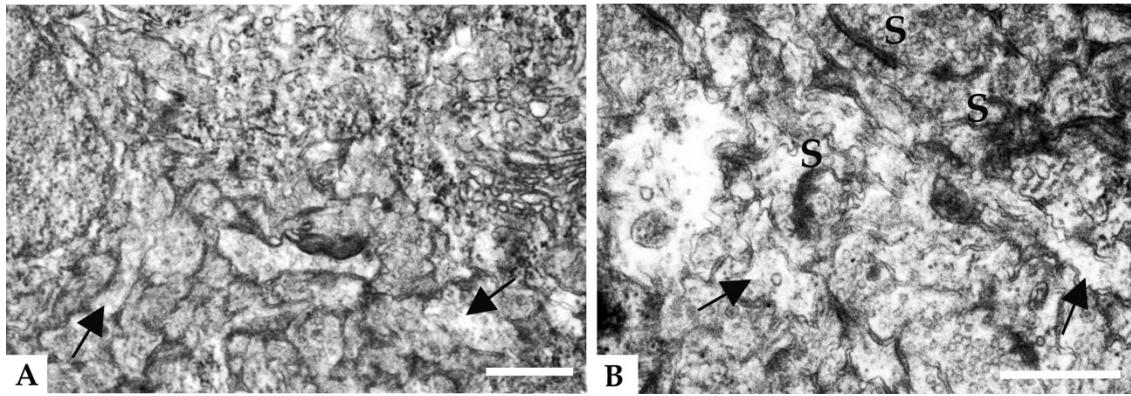


Figure S5. Electron microscope analysis on wildtype embryo. In **(A)** and **(B)** an electron micrograph of the neuropil region in the telencephalon of a 5 dpf wildtype embryo, not-injected with GFAP WT plasmid. No such electron-dense material in glial processes, identified by their irregular shape (arrows), is detected in the neuropil. Scale bar: 500 nm. (S: pre-synaptic bulbs).