

Supporting Information for

A Mass Spectrometry Sensor for *in vivo* Acetylcholine Monitoring

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Figure S1	Ion suppression of acetylcholine by salt in aCSF.
Figure S2	Carryover at the ESI probe
Figure S3	Acetylcholine trace in the first 30 min of neostigmine microinjection experiment

Figure S1

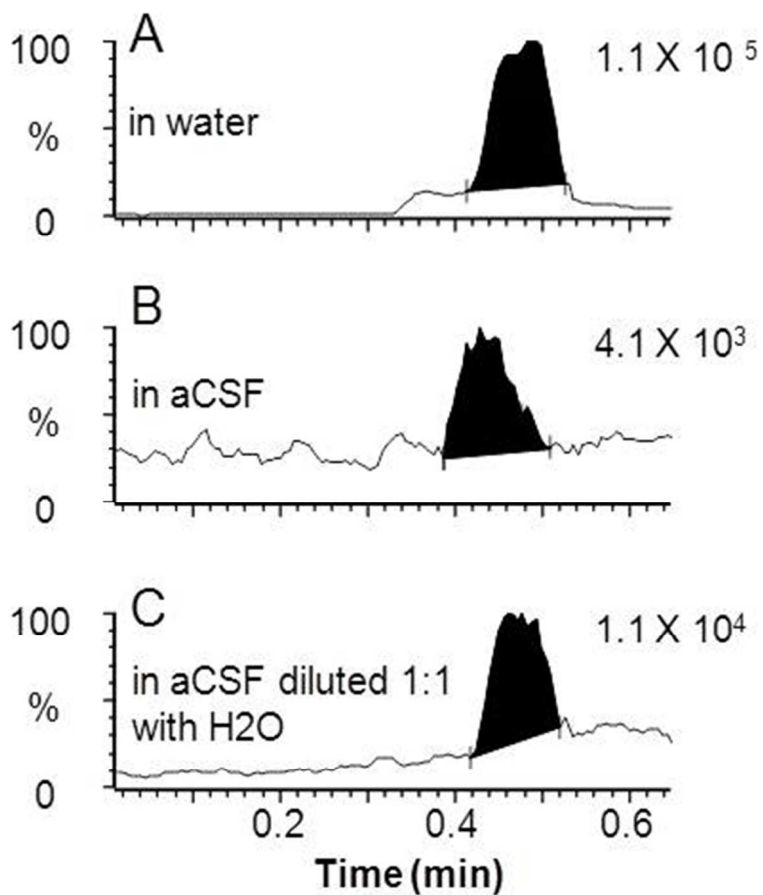


Figure S1 Ion suppression of d4-acetylcholine by the inorganic salt in aCSF shown by FIA coupled to ESI-MS/MS (150→91). 50 nM d4-acetylcholine was dissolved in water (A), aCSF (B) and diluted aCSF (C). Ion intensity was shown on the top right corner. FIA flow rate was 100 μ L/min. Acquisition started right after sample injection.

Figure S2

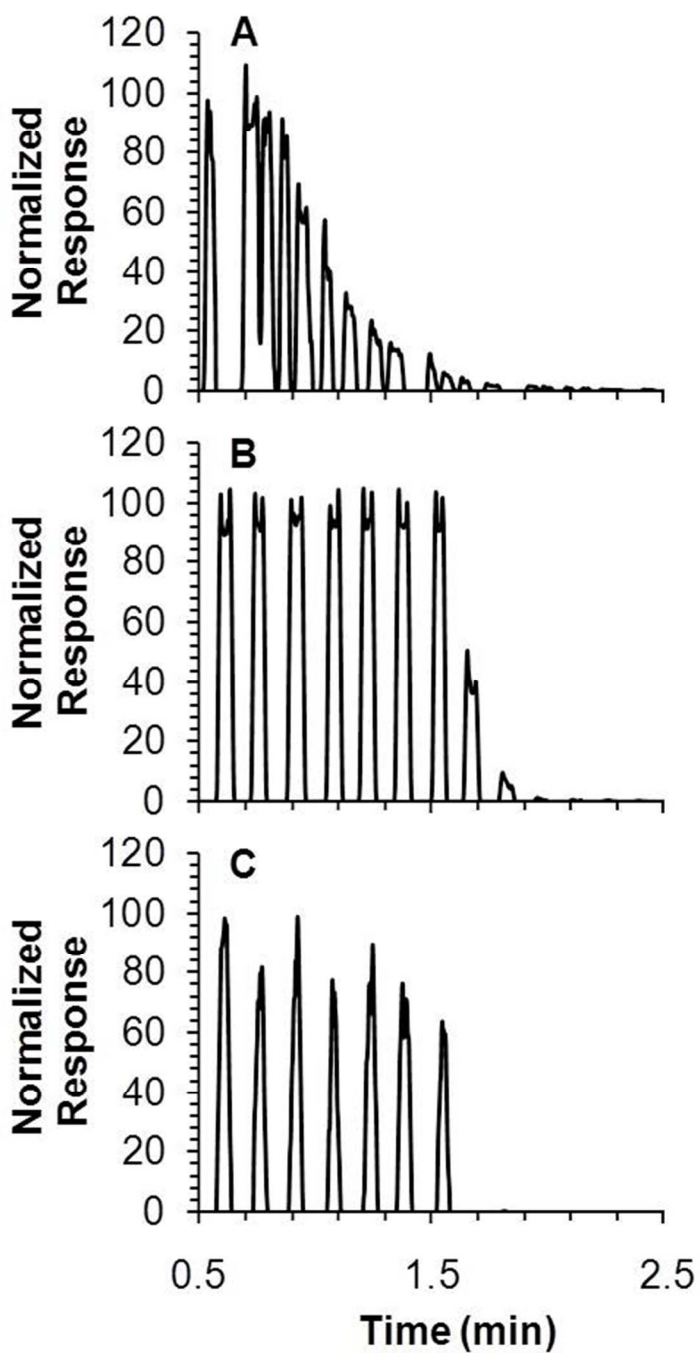


Figure S2 Carryover at the ESI probe liquid connection characterized by infusing discrete droplets containing 1 μM acetylcholine and then step decrease to 0 μM using: (A) a low dead volume union and steel ESI needle; (B) a zero dead volume union and steel ESI probe; and (C) a zero dead volume union and modified fused silica ESI needle.

Figure S3

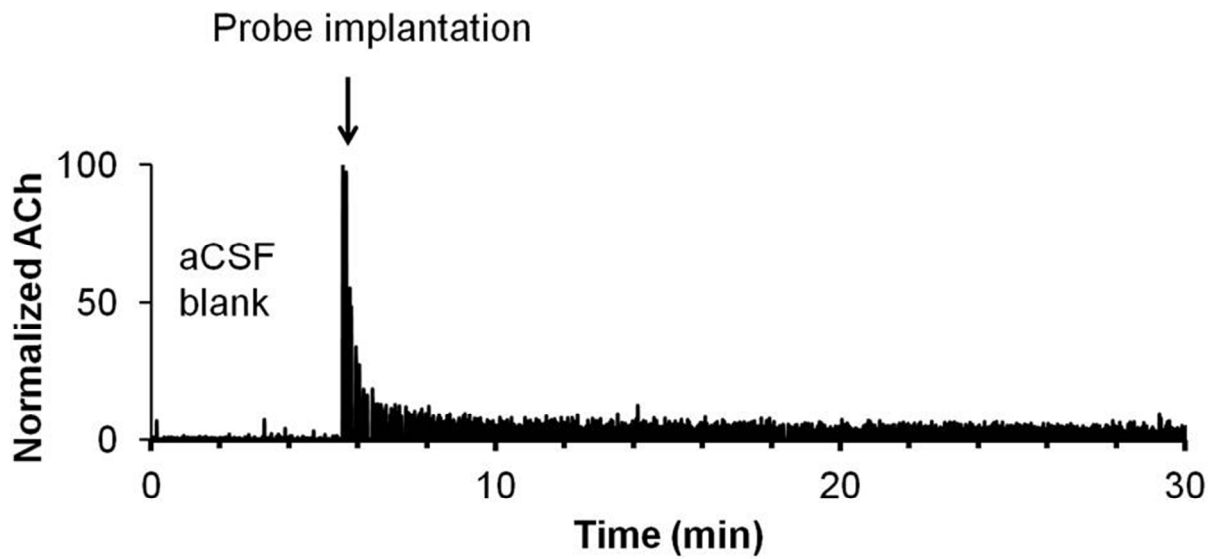


Figure S3 Acetylcholine traces during initial 25 min of dialysis probe insertion. Microdialysis probe was kept in blank aCSF before implantation (0-6 min). The spike of acetylcholine at 6 min was caused by tissue damage as the probe was inserted into the brain. Within a few min a stable signal was achieved.