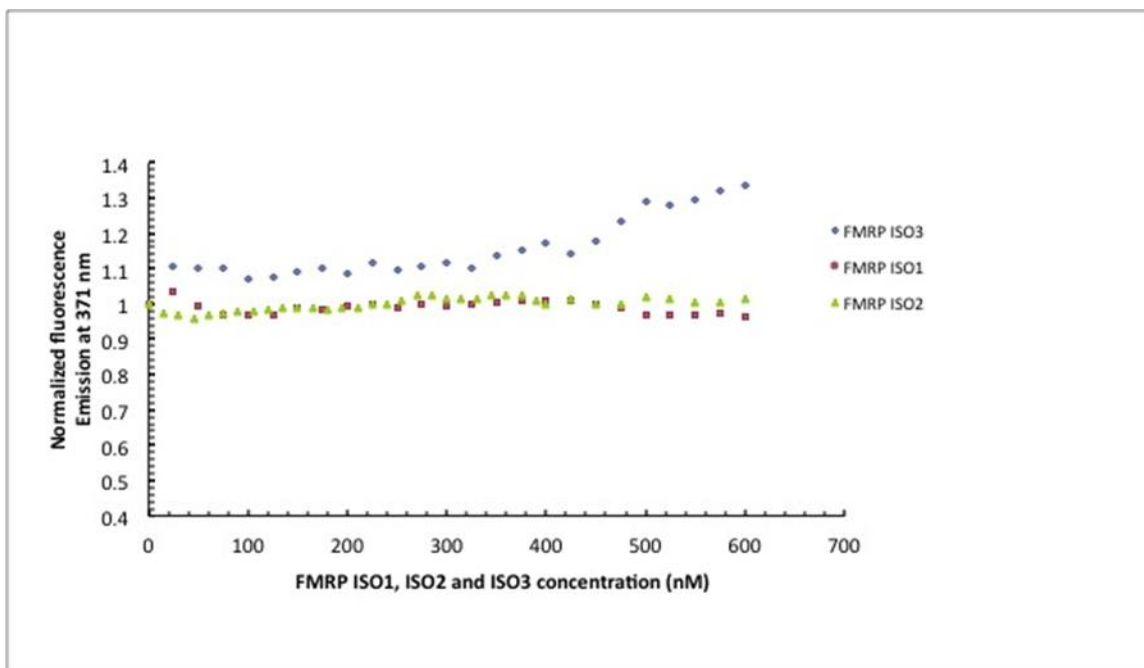


Supplemental Figure 1. Steady-state fluorescence spectroscopy emission changes at 371 nm of a 2AP reporter located in the terminal loop of a 16 nt control hairpin as FMRP ISO1, ISO2 or ISO3 are titrated into a fixed concentration of the RNA (150 nM). The sequence of the control RNA is UCACGGCG2APGCUGUGA.



Supplemental Table 1. MALDI-TOF-MS analysis results for FMRP ISO2 (A.) and FMRP ISO3 (B.). Note that the fragment 508-522 shown in red is present only in FMRP ISO2, as residues 505-516 are missing from FMRP ISO3.

A. FMRP ISO2

Amino Acid placement	Peptide sequence	Observed Mass	Expected Mass	Δ mass
22 – 40	K.DVHEDSITVAFENNWQPDR.Q	2272.0383	2271.0192	1.0191
58 – 70	K.DINESDEVEVYSR.A	1554.6902	1553.6845	1.0057
129 – 138	K.IKLDVPEDLR.Q	1197.6823	1196.6765	1.0058
219 – 226	R.FHEQFIVR.E	1075.5728	1074.5611	1.0117
227 – 245	R.EDLMGLAIGTHGANIQQAR.K	1995.0142	1994.0003	1.0139
277 – 290	R.SFLEFAEDVIQVPR.N	1649.8616	1648.8461	1.0155
325 – 344	K.NVPQEEEIMPPNSLPSNNSR.V	2252.0833	2251.0539	1.0294
355 – 372	K.HLDIKENSTHFSQPNSTK.V	2083.0281	2082.0130	1.0151
376 – 393	R.VLVASSVVAGESQKPELK.A	1841.0378	1840.0306	1.0072
408 – 425	K.DSIANATVLLDYHLNYLK.E	2063.0969	2062.0735	1.0234
460 – 471	K.SYVTDDGQGMGR.G	1301.5542	1300.5354	1.0188
508 – 522	R.DELSDWSLAPTEER.E	1776.7792	1775.7850	0.9942
552 – 564	K.GNDDHSRTDNRPR.N	1539.6798	1538.6934	0.9864

B. FMRP ISO3

Amino Acid placement	Peptide sequence	Observed Mass	Expected Mass	Δ mass
22 – 40	K.DVHEDSITVAFENNWQPDR.Q	2272.0129	2271.0192	0.9937
58 – 70	K.DINESDEVEVYSR.A	1554.6900	1553.6845	1.0055
129 – 138	K.IKLDVPEDLR.Q	1197.6761	1196.6765	0.9996
219 – 226	R.FHEQFIVR.E	1075.5663	1074.5611	1.0052
227 – 245	R.EDLMGLAIGTHGANIQQAR.K	2010.9955	2009.9953	1.0002
277 – 290	R.SFLEFAEDVIQVPR.N	1649.8597	1648.8461	1.0136
325 – 344	K.NVPQEEEIMPPNSLPSNNSR.V	2252.0669	2251.0539	1.013
355 – 372	K.HLDIKENSTHFSQPNSTK.V	2083.0176	2082.0130	1.0046
376 – 393	R.VLVASSVVAGESQKPELK.A	1841.0395	1840.0306	1.0089
408 – 425	K.DSIANATVLLDYHLNYLK.E	2063.0833	2062.0735	1.0098
460 – 471	K.SYVTDDGQGMGR.G	1285.5510	1284.5405	1.0105
552 – 564	K.GNDDHSRTDNRPR.N	1539.7091	1538.6934	1.0157