Supporting Information

Detection of amyloid β oligomers with RNA aptamers in *App^NL-G-F/NL-G-F* mice, a model of Arctic Alzheimer disease

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- Figure S1
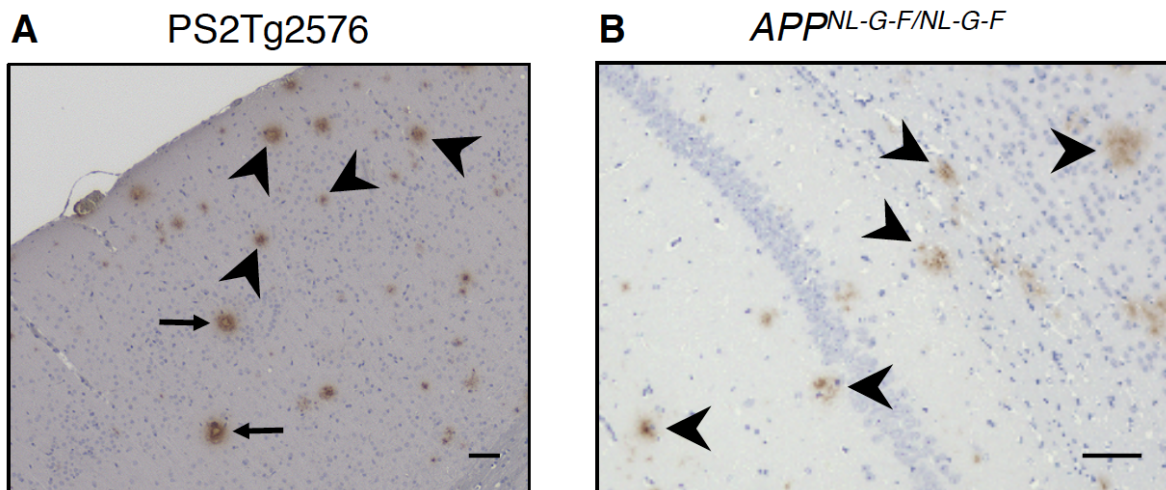- Table S1

A PS2Tg2576

B *APP*NL-G-F/NL-G-F

Figure S1. (A) Representative micrograph of diffuse aggregates (arrowheads) and senile plaques (arrows) observed in PS2Tg2576 using anti-N-terminus of the Aβ (82E1) antibody (1 μg/ml). Scale bar indicates 50 μm. (B) Representative micrograph of diffuse aggregates (arrowheads) of *App*NL-G-F/NL-G-F using 82E1 (1 μg/ml).

Table S1. The calculated and observed masses of Aβ42 and Aβ42 treated with E22P-AbD43. The calculated masses matched (*upper table*) with observed masses (*lower table*) are highlighted in yellow.

WT-Aβ 42

n	1	2	3	4	5	6	7	8	9	10	11	12
mass	4514.1	9028.2	13542.2	18056.3	22570.4	27084.5	31598.6	36112.6	40626.7	45140.8	49654.9	54169.0
z 1	4513.1	9027.2	13541.2	18055.3	22569.4	27083.5	31597.6	36111.6	40625.7	45139.8	49653.9	54168.0
2	2256.0	4513.1	6770.1	9027.2	11284.2	13541.2	15798.3	18055.3	20312.4	22569.4	24826.4	27083.5
3	**1503.7**	3008.4	4513.1	6017.8	7522.5	9027.2	10531.6	12036.5	13541.2	15045.9	16550.6	18055.3
4	**1127.5**	2256.0	3384.6	4513.1	5641.6	6770.1	7898.6	9027.2	10155.7	11284.2	12412.7	13541.2
5	901.8	**1804.6**	2707.4	3610.3	4513.1	5415.9	6318.7	7221.5	8124.3	9027.2	9930.0	10832.8
6	751.3	1503.7	2256.0	3008.4	3760.7	4513.1	5265.4	6017.8	6770.1	7522.5	8274.8	9027.2
7	643.9	1288.7	**1933.6**	2578.5	3223.3	3868.2	4513.1	5157.9	5802.8	6447.7	7092.5	7737.4
8	563.3	1127.5	1691.8	**2256.0**	2820.3	3384.6	3948.8	4513.1	5077.3	5641.6	6205.9	6770.1
9	500.6	1002.1	1503.7	2005.2	2506.8	3008.4	3509.9	4011.5	4513.1	5014.6	5516.2	6017.8
10	450.4	901.8	1353.2	1804.6	2256.0	2707.4	3158.8	3610.3	4061.7	4513.1	4964.5	5415.9
11	409.4	819.7	1230.1	1640.5	2050.8	2461.2	2871.6	3282.0	3692.3	4102.7	4513.1	4923.4
12	375.2	751.3	1127.5	1503.7	1879.9	2256.0	2632.2	3008.4	3384.6	3760.7	4136.9	4513.1
13	346.2	693.5	1040.7	1387.9	1735.2	2082.4	2429.7	2776.9	3124.1	3471.4	3818.6	4165.8
14	321.4	643.9	966.3	1288.7	1611.2	1933.6	2256.0	2578.5	2900.9	3223.3	3545.8	3868.2
15	299.9	600.9	901.8	1202.7	1503.7	1804.6	2105.6	2406.5	2707.4	3008.4	3309.3	3610.3
16	281.1	563.3	845.4	1127.5	1409.6	1691.8	1973.9	2256.0	2538.2	2820.3	3102.4	3384.6
17	264.5	530.1	795.6	1061.1	1326.7	1592.2	1857.7	2123.3	2388.8	2654.3	2919.9	3185.4
18	249.8	500.6	751.3	1002.1	1252.9	1503.7	1754.5	2005.2	2256.0	2506.8	2757.6	3008.4
19	236.6	474.2	711.7	949.3	1186.9	1424.5	1662.1	1899.7	2137.2	2374.8	2612.4	2850.0
20	224.7	450.4	676.1	901.8	1127.5	1353.2	1578.9	1804.6	2030.3	2256.0	2481.7	2707.4
21	213.9	428.9	643.9	858.8	1073.8	1288.7	1503.7	1718.6	1933.6	2148.6	2363.5	2578.5
22	204.2	409.4	614.5	819.7	1024.9	1230.1	1435.3	1640.5	1845.7	2050.8	2256.0	2461.2
23	195.3	391.5	587.8	784.0	980.3	1176.6	1372.8	1569.1	1765.4	1961.6	2157.9	2354.2
24	187.1	375.2	563.3	751.3	939.4	1127.5	1315.6	1503.7	1691.8	1879.9	2067.9	2256.0
25	179.6	360.1	540.7	721.2	901.8	1082.4	1262.9	1443.5	1624.1	1804.6	1985.2	2165.8
26	172.6	346.2	519.8	693.5	867.1	1040.7	1214.3	1387.9	1561.6	1735.2	1908.8	2082.4
27	166.2	333.4	500.6	667.7	834.9	1002.1	1169.3	1336.5	1503.7	1670.9	1838.1	2005.2
28	160.2	321.4	482.6	643.9	805.1	966.3	1127.5	1288.7	1449.9	1611.2	1772.4	1933.6
29	154.7	310.3	466.0	621.6	777.3	932.9	1088.6	1244.3	1399.9	1555.6	1711.2	1866.9
30	149.5	299.9	450.4	600.9	751.3	901.8	1052.3	1202.7	1353.2	1503.7	1654.2	1804.6

observed [a]	1503.4	1804.6	1936.9	2256.2								
	1127.3											

[a]Observed masses indicate red circles in Fig. 5A.

(continued)

WT-Aβ42+E22P-AbD43

n	1	2	3	4	5	6	7	8	9	10	11	12
mass	29064.7167	58129.4	87194.2	116258.9	145323.6	174388.3	203453.0	232517.7	261582.5	290647.2	319711.9	348776.6
1	29063.7	58128.4	87193.1	116257.9	145322.6	174387.3	203452.0	232516.7	261581.4	290646.2	319710.9	348775.6
2	14531.4	29063.7	43596.1	58128.4	72660.8	87193.1	101725.5	116257.9	130790.2	145322.6	159854.9	174387.3
3	9687.2	19375.5	29063.7	38751.9	48440.2	58128.4	67816.7	77504.9	87193.1	96881.4	106569.6	116257.9
4	7265.2	14531.4	21797.5	29063.7	36329.9	43596.1	50862.2	58128.4	65394.6	72660.8	79927.0	87193.1
5	5811.9	11624.9	17437.8	23250.8	29063.7	34876.6	40689.6	46502.5	52315.5	58128.4	63941.4	69754.3
6	4843.1	9687.2	14531.4	19375.5	24219.6	29063.7	33907.8	38751.9	43596.1	48440.2	53284.3	58128.4
7	4151.1	8303.2	12455.3	16607.4	20759.5	24911.6	29063.7	33215.8	37367.9	41520.0	45672.1	49824.2
8	3632.1	7265.2	10898.3	14531.4	18164.4	21797.5	25430.6	29063.7	32696.8	36329.9	39963.0	43596.1
9	3228.4	6457.8	9687.2	12916.6	16146.1	19375.5	22604.9	25834.3	29063.7	32293.1	35522.5	38751.9
10	2905.5	5811.9	8718.4	11624.9	14531.4	17437.8	20344.2	23250.8	26157.2	29063.7	31970.2	34876.6
11	2641.2	5283.5	7925.7	10568.0	13210.2	15852.5	18494.7	21137.0	23779.2	26421.5	29063.7	31706.0
12	2421.1	4843.1	7265.2	9687.2	12109.3	14531.4	16953.4	19375.5	21797.5	24219.6	26641.6	29063.7
13	2234.7	4470.5	6706.2	8942.0	11177.7	13413.5	15649.2	17885.0	20120.7	22356.5	24592.2	26828.0
14	2075.0	4151.1	6227.1	8303.2	10379.2	12455.3	14531.4	16607.4	18683.5	20759.5	22835.6	24911.6
15	1936.6	3874.3	5811.9	7749.6	9687.2	11624.9	13562.5	15500.2	17437.8	19375.5	21313.1	23250.8
16	1815.5	3632.1	5448.6	7265.2	9081.7	10898.3	12714.8	14531.4	16347.9	18164.4	19981.0	21797.5
17	1708.7	3418.4	5128.1	6837.7	8547.4	10257.1	11966.8	13676.5	15386.2	17095.9	18805.6	20515.3
18	**1613.7**	3228.4	4843.1	6457.8	8072.5	9687.2	11301.9	12916.6	14531.4	16146.1	17760.8	19375.5
19	1528.7	3058.4	4588.2	6117.9	7647.6	9177.3	10707.0	12236.8	13766.5	15296.2	16825.9	18355.7
20	1452.2	2905.5	4358.7	5811.9	7265.2	8718.4	10171.6	11624.9	13078.1	14531.4	15984.6	17437.8
21	1383.0	2767.1	4151.1	5535.1	6919.2	8303.2	9687.2	11071.3	12455.3	13839.3	15223.4	16607.4
22	1320.1	2641.2	3962.4	5283.5	6604.6	7925.7	9246.9	10568.0	11889.1	13210.2	14531.4	15852.5
23	1262.7	2526.4	3790.0	5053.7	6317.4	7581.1	8844.8	10108.5	11372.1	12635.8	13899.5	15163.2
24	1210.0	2421.1	3632.1	4843.1	6054.1	7265.2	8476.2	9687.2	10898.3	12109.3	13320.3	14531.4
25	1161.6	2324.2	3486.8	4649.3	5811.9	6974.5	8137.1	9299.7	10462.3	11624.9	12787.5	13950.1
26	1116.9	2234.7	3352.6	4470.5	5588.4	6706.2	7824.1	8942.0	10059.9	11177.7	12295.6	13413.5
27	1075.5	**2151.9**	3228.4	4304.9	5381.3	6457.8	7534.3	8610.8	9687.2	10763.7	11840.2	12916.6
28	1037.0	2075.0	3113.1	4151.1	5189.1	6227.1	7265.2	8303.2	9341.2	10379.2	11417.3	12455.3
29	1001.2	2003.5	3005.7	4007.9	5010.2	6012.4	7014.6	8016.8	9019.1	10021.3	11023.5	12025.8
30	967.8	1936.6	2905.5	3874.3	4843.1	5811.9	6780.8	7749.6	8718.4	9687.2	10656.1	11624.9
31	936.6	**1874.1**	2811.7	3749.3	4686.8	5624.4	6562.0	7499.6	8437.1	9374.7	10312.3	11249.9
32	907.3	1815.5	2723.8	3632.1	4540.4	5448.6	6356.9	7265.2	8173.4	9081.7	9990.0	10898.3
33	879.7	1760.5	2641.2	3522.0	4402.7	5283.5	6164.2	7045.0	7925.7	8806.5	9687.2	10568.0
34	853.8	1708.7	2563.5	3418.4	4273.2	5128.1	5982.9	6837.7	7692.6	8547.4	9402.3	10257.1
35	829.4	1659.8	2490.3	3320.7	4151.1	4981.5	5811.9	6642.4	7472.8	8303.2	9133.6	9964.0
36	806.3	1613.7	2421.1	3228.4	4035.8	4843.1	5650.5	6457.8	7265.2	8072.5	8879.9	9687.2
37	784.5	1570.1	**2355.6**	3141.1	3926.7	4712.2	5497.7	6283.3	7068.8	7854.3	8639.9	9425.4
38	763.9	1528.7	2293.6	3058.4	3823.3	4588.2	5353.0	6117.9	6882.7	7647.6	8412.5	9177.3
39	744.2	1489.5	2234.7	2980.0	3725.2	4470.5	5215.7	5961.0	6706.2	7451.5	8196.7	8942.0
40	725.6	1452.2	2178.8	2905.5	3632.1	4358.7	5085.3	5811.9	6538.6	7265.2	7991.8	8718.4
41	707.9	1416.8	2125.7	2834.6	3543.5	4252.4	4961.3	5670.2	6379.1	7087.9	7796.8	8505.7
42	691.0	1383.0	2075.0	2767.1	3459.1	4151.1	4843.1	5535.1	6227.1	6919.2	7611.2	8303.2
43	674.9	1350.8	2026.8	2702.7	3378.6	4054.5	4730.5	5406.4	6082.3	6758.2	7434.2	8110.1
44	659.6	1320.1	**1980.7**	2641.2	3301.8	3962.4	4622.9	5283.5	5944.0	6604.6	7265.2	7925.7
45	644.9	1290.8	1936.6	2582.5	3228.4	3874.3	4520.2	5166.1	5811.9	6457.8	7103.7	7749.6
46	630.8	1262.7	1894.5	2526.4	3158.2	3790.0	4421.9	5053.7	5685.6	6317.4	6949.3	7581.1
47	617.4	1235.8	1854.2	2472.6	3091.0	3709.4	4327.8	4946.2	5564.6	6183.0	6801.4	7419.8
48	604.5	1210.0	1815.5	2421.1	3026.6	3632.1	4237.6	4843.1	5448.6	6054.1	6659.7	7265.2
49	592.1	1185.3	1778.5	2371.6	2964.8	3557.9	4151.1	4744.3	5337.4	5930.6	6523.7	7116.9
50	580.3	1161.6	1742.9	2324.2	2905.5	3486.8	4068.1	4649.3	5230.6	5811.9	6393.2	6974.5
51	568.9	1138.8	1708.7	2278.6	2848.5	3418.4	3988.3	4558.2	5128.1	5698.0	6267.9	6837.7
52	557.9	1116.9	1675.8	2234.7	2793.7	3352.6	3911.6	4470.5	5029.4	5588.4	6147.3	6706.2
53	547.4	1095.8	1644.2	2192.6	2740.9	3289.3	3837.7	4386.1	4934.5	5482.9	6031.3	6579.7
54	537.2	1075.5	1613.7	2151.9	2690.2	3228.4	3766.6	4304.9	4843.1	5381.3	5919.6	6457.8
55	527.4	1055.9	1584.3	2112.8	2641.2	3169.7	3698.1	4226.6	4755.0	5283.5	5811.9	6340.4
56	518.0	1037.0	1556.0	2075.0	2594.1	3113.1	3632.1	4151.1	4670.1	5189.1	5708.1	6227.1
57	508.9	1018.8	1528.7	2038.6	2548.5	3058.4	3568.3	4078.3	4588.2	5098.1	5608.0	6117.9
58	500.1	1001.2	1502.3	2003.5	2504.6	3005.7	3506.8	4007.9	4509.0	5010.2	5511.3	6012.4
59	491.6	984.2	1476.9	1969.5	2462.1	2954.7	3447.3	3940.0	4432.6	4925.2	5417.8	5910.5
60	483.4	967.8	1452.2	1936.6	2421.1	2905.5	3389.9	3874.3	4358.7	4843.1	5327.5	5811.9

(The left-side axis label for rows 1–60 is **z**.)

observed[b]	1610.4	2154.0	2354.9
		1873.7	1981.7

[b]Observed masses indicate blue circles in Fig. 5B.