Supplementary Table 1. IgA1 myeloma proteins used in this study

Myeloma protein	IgA isotype	Molecular form
Mce	IgA1	Polymer
Mce1	IgA1	Polymer
Ale mono	IgA1	Monomer
Ale poly	IgA1	Polymer
Fab-IgA1	IgA1	Fab fragment of IgA1 (Ste) containing part of the hinge region

Supplementary Table 2. Serum levels of antigen-specific IgG

Cohort from southeastern USA

Antigen	IgAN (n = 16)	Controls (n = 16)
dd-IgA1	2.256 ± 0.112*	1.995 ± 0.146
Fab-IgA1	2.136 ± 0.163*	1.724 ± 0.184

Cohort from Japan

Antigen	IgAN (n = 20)	Controls (n = 20)
Fab-IgA1	2.021 ± 0.202**	1.532 ± 0.229

Data are expressed as optical density at 490 nm and shown as mean ± SD

*, $P < 0.001$, **, $P < 0.0001$

dd-IgA1, enzymatically desialylated and degalactosylated IgA1

Fab-IgA1, Fab fragment of Gd-IgA1 containing part of the hinge region with *O*-glycans

IgAN, patients with IgA nephropathy; Controls, healthy controls

Supplementary Table 3. Primer sequences for mutagenesis

#1123	Sense		Antisense	
PCR 1	Age1-VH3	ACTGCAACCGGTGTACATTCCGAGGTGCAGCTGGTGGAGTC	R-mutated	AGGGGCGACACACTTTCGCACAGTAATATATGGCCG
PCR 2	F-mutated	ATATATTACTGTGCGAAAGTGTGTCGCCCCTGG	Sal1-JH3	CTGCGAAGTCGACGCTGAAGAGACGGTGACCATTG
Overlap PCR	Age1-VH3	ACTGCAACCGGTGTACATTCCGAGGTGCAGCTGGTGGAGTC	Sal1-JH3	CTGCGAAGTCGACGCTGAAGAGACGGTGACCATTG
#9017	Sense		Antisense	
PCR 1	Age1-VH3	ACTGCAACCGGTGTACATTCCGAGGTGCAGCTGGTGGAGTC	R-mutated	ATCATAGCGCTGGACTCTGGAACAGTAATACACAGCCGTG
PCR 2	F-mutated	TGTGTATTACTGTTCCAGAGTCCAGCGCTATGATAGCACTG	Sal1-JH145	CTGCGAAGTCGACGCTGAGGAGACGGTGACCAGGG
Overlap PCR	Age1-VH3	ACTGCAACCGGTGTACATTCCGAGGTGCAGCTGGTGGAGTC	Sal1-JH145	CTGCGAAGTCGACGCTGAGGAGACGGTGACCAGGG

Supplementary Table 4. Clinical characteristics of study population

	Cohort		Age	Male	Female	Race	serum IgG mg/ml	serum IgA mg/ml	SCr[a] mg/dl	UP/Cr[b]
IgAN	US	28	40.0 ± 15.2	W16, B1	W9, B2	W25, B3	12.3 ± 2.7	4.4 ± 2.4	1.4 ± 0.9	1.2 ± 1.5
	Japan	32	30.3 ± 7.0	12	20	-	12.1 ± 2.9	3.5 ± 1.1	1.2 ± 0.4	1.4 ± 1.7
	total	60	34.8 ± 12.5	29	31	W25, B3, J32	12.2 ± 2.8	3.9 ± 1.9	1.3 ± 0.6	1.3 ± 1.6
Disease controls	US	7	33.7 ± 16.4	W5	W1, B1	W6, B1	17.2 ± 6.3	3.4 ± 1.2	1.0 ± 0.3	1.5 ± 2.6
	Japan	13	35.7 ± 8.4	7	6	-	15.5 ± 3.5	3.8 ± 1.8	1.2 ± 0.4	1.6 ± 1.7
	total	20	35.0 ± 11.4	12	8	W6, B1, J20	16.1 ± 4.6	3.7 ± 1.6	1.1 ± 0.4	1.6 ± 1.9
Healthy controls	US	30	38.6 ± 17.9	W12, B2	W12, B4	W24, B6	10.4 ± 2.4	3.1 ± 1.7	1.0 ± 0.2	0.1 ± 0.1
	Japan	10	36.1 ± 10.0	4	6	-	10.9 ± 2.9	2.8 ± 1.5	0.8 ± 0.2	0.1 ± 0.0
	total	40	38.0 ± 16.2	18	22	W24, B6, J10	10.5 ± 2.5	3.0 ± 1.7	0.9 ± 0.2	0.1 ± 0.1

Data expressed as mean ± SD. [a]Serum creatinine concentration. [b]Urinary protein/creatinine ratio

W, white, B, African-American, J, Japanese