

# SNPStats results

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## Descriptive statistics

**Response variable:** **status** **Type:** categorical

	n	missing	unique
All subjects	179	0	2
status=0-control	77 (43.02%)	---	---
status=1-cese	102 (56.98%)	---	---

**Covariate:** **age** **Type:** quantitative

	n	missing	unique	mean	.05	.10	.25	.50	.75	.90	.95
All subjects	179	0	59	50.29	22.9	29	40	51	61	69	76.1
status = 0-control	77	0	41	44.81	21.8	28.6	36	48	52	57.4	61
status = 1-cese	102	0	49	54.43	25.05	30	42.25	58	66	74	77

lowest: 18, 19, 20, 21, 22 highest: 77, 78, 80, 82, 86

**Covariate:** **gender** **Type:** categorical

	n	missing	unique
All subjects	179	0	2
status=0-control	77	0	2
status=1-cese	102	0	2

	Female	Male
All subjects	116 (65%)	63 (35%)
status=0-control	46 (60%)	31 (40%)
status=1-cese	70 (69%)	32 (31%)

## Single-SNP analysis

**SNP:** **rs4256**

**Percentage of typed samples:** 179/179 (100%)

rs4256 allele frequencies (n=179)						
	All subjects		status=0-control		status=1-cese	
Allele	Count	Proportion	Count	Proportion	Count	Proportion
A	219	0.61	91	0.59	128	0.63
C	139	0.39	63	0.41	76	0.37

rs4256 genotype frequencies (n=179)						
	All subjects		status=0-control		status=1-cese	
Genotype	Count	Proportion	Count	Proportion	Count	Proportion
A/A	66	0.37	28	0.36	38	0.37
A/C	87	0.49	35	0.45	52	0.51
C/C	26	0.15	14	0.18	12	0.12

rs4256 exact test for Hardy-Weinberg equilibrium (n=179)						
	N11	N12	N22	N1	N2	P-value
All subjects	66	87	26	219	139	0.87
status=0-control	28	35	14	91	63	0.64
status=1-cece	38	52	12	128	76	0.41

rs4256 association with response status (n=179, adjusted by age+gender)						
Model	Genotype	status=0-control	status=1-cece	OR (95% CI)	P-value	AIC BIC
Codominant	A/A	28 (36.4%)	38 (37.2%)	1.00		
	C/A	35 (45.5%)	52 (51%)	0.88 (0.44-1.76)	0.45	234.2 250.1
	C/C	14 (18.2%)	12 (11.8%)	0.54 (0.20-1.43)		
Dominant	A/A	28 (36.4%)	38 (37.2%)	1.00		
	C/A-C/C	49 (63.6%)	64 (62.8%)	0.79 (0.41-1.52)	0.47	233.3 246
Recessive	A/A-C/A	63 (81.8%)	90 (88.2%)	1.00		
	C/C	14 (18.2%)	12 (11.8%)	0.58 (0.24-1.41)	0.23	232.3 245.1
Overdominant	A/A-C/C	42 (54.5%)	50 (49%)	1.00		
	C/A	35 (45.5%)	52 (51%)	1.06 (0.56-1.98)	0.87	233.8 246.5
Log-additive	---	---	---	0.76 (0.48-1.22)	0.26	232.5 245.3

#### Interaction analysis with covariate gender

rs4256 and gender cross-classification interaction table (n=179, adjusted by age)						
	FeMale			Male		
	status=0-control	status=1-cece	OR (95% CI)	status=0-control	status=1-cece	OR (95% CI)
A/A	16	22	1.00	12	16	0.97 (0.34-2.74)
C/A	19	39	1.14 (0.46-2.79)	16	13	0.57 (0.21-1.59)
C/C	11	9	0.49 (0.15-1.56)	3	3	0.88 (0.15-5.24)

Interaction p-value: 0.43

gender within rs4256 (n=179, adjusted by age)						
		status=0-control	status=1-cece	OR (95% CI)		
A/A	FeMale	16	22	1.00		
	Male	12	16	0.97 (0.34-2.74)		
C/A	FeMale	19	39	1.00		
	Male	16	13	0.50 (0.19-1.31)		
C/C	FeMale	11	9	1.00		
	Male	3	3	1.78 (0.26-12.01)		

Test for interaction in the trend: 0.91

rs4256 within gender (n=179, adjusted by age)						
		status=0-control	status=1-cece	OR (95% CI)		
FeMale	A/A	16	22	1.00		
	C/A	19	39	1.14 (0.46-2.79)		
	C/C	11	9	0.49 (0.15-1.56)		
Male	A/A	12	16	1.00		
	C/A	16	13	0.59 (0.20-1.76)		
	C/C	3	3	0.90 (0.14-5.64)		

Test for interaction in the trend: 0.43

#### SNP: rs0519

Percentage of typed samples: 179/179 (100%)

rs0519 allele frequencies (n=179)

	All subjects		status=0-control		status=1-cese	
Allele	Count	Proportion	Count	Proportion	Count	Proportion
G	244	0.68	105	0.68	139	0.68
A	114	0.32	49	0.32	65	0.32

rs0519 genotype frequencies (n=179)						
	All subjects		status=0-control		status=1-cese	
Genotype	Count	Proportion	Count	Proportion	Count	Proportion
A/A	14	0.08	6	0.08	8	0.08
G/A	86	0.48	37	0.48	49	0.48
G/G	79	0.44	34	0.44	45	0.44

rs0519 exact test for Hardy-Weinberg equilibrium (n=179)						
	N11	N12	N22	N1	N2	P-value
All subjects	79	86	14	244	114	0.17
status=0-control	34	37	6	105	49	0.44
status=1-cece	45	49	8	139	65	0.36

Model	Genotype		status=0-control	status=1-cece	OR (95% CI)	P-value	AIC	BIC
	G/G	A/G						
Codominant	G/G	34 (44.2%)	45 (44.1%)	1.00				
	A/G	37 (48%)	49 (48%)	0.82 (0.42-1.59)	0.82	235.4	251.4	
	A/A	6 (7.8%)	8 (7.8%)	0.80 (0.23-2.71)				
Dominant	G/G	34 (44.2%)	45 (44.1%)	1.00				
	A/G-A/A	43 (55.8%)	57 (55.9%)	0.82 (0.43-1.55)	0.54	233.4	246.2	
Recessive	G/G-A/G	71 (92.2%)	94 (92.2%)	1.00				
	A/A	6 (7.8%)	8 (7.8%)	0.89 (0.27-2.85)	0.84	233.8	246.5	
Overdominant	G/G-A/A	40 (52%)	53 (52%)	1.00				
	A/G	37 (48%)	49 (48%)	0.85 (0.45-1.60)	0.61	233.5	246.3	
Log-additive	---	---	---	0.86 (0.52-1.43)	0.56	233.5	246.2	

#### Interaction analysis with covariate gender

rs0519 and gender cross-classification interaction table (n=179, adjusted by age)						
	FeMale			Male		
	status=0-control	status=1-cece	OR (95% CI)	status=0-control	status=1-cece	OR (95% CI)
G/G	20	27	1.00	14	18	0.97 (0.37-2.51)
A/G	21	37	1.01 (0.44-2.33)	16	12	0.56 (0.21-1.51)
A/A	5	6	0.67 (0.16-2.70)	1	2	1.77 (0.14-23.01)

Interaction p-value: 0.48

gender within rs0519 (n=179, adjusted by age)						
	status=0-control			status=1-cece		
	FeMale	status=0-control	status=1-cece	OR (95% CI)	FeMale	status=0-control
G/G	FeMale	20	27	1.00		
	Male	14	18	0.97 (0.37-2.51)		
A/G	FeMale	21	37	1.00		
	Male	16	12	0.55 (0.21-1.45)		
A/A	FeMale	5	6	1.00		
	Male	1	2	2.65 (0.16-43.48)		

Test for interaction in the trend: 0.88

rs0519 within gender (n=179, adjusted by age)						
FeMale	status=0-control			status=1-cece		
	G/G	status=0-control	status=1-cece	OR (95% CI)	FeMale	status=0-control
	G/G	20	27	1.00		

	<b>A/G</b>	21	37	1.01 (0.44-2.33)	
	<b>A/A</b>	5	6	0.67 (0.16-2.70)	
<b>Male</b>		<b>status=0-control</b>	<b>status=1-cece</b>	<b>OR (95% CI)</b>	
	<b>G/G</b>	14	18	1.00	
	<b>A/G</b>	16	12	0.58 (0.20-1.68)	
	<b>A/A</b>	1	2	1.83 (0.14-24.56)	

**Test for interaction in the trend:** 0.48

### SNP: rs0270

**Percentage of typed samples:** 179/179 (100%)

rs0270 allele frequencies (n=179)						
	All subjects		status=0-control		status=1-cece	
Allele	Count	Proportion	Count	Proportion	Count	Proportion
A	202	0.56	85	0.55	117	0.57
G	156	0.44	69	0.45	87	0.43

rs0270 genotype frequencies (n=179)						
	All subjects		status=0-control		status=1-cece	
Genotype	Count	Proportion	Count	Proportion	Count	Proportion
A/A	56	0.31	23	0.3	33	0.32
A/G	90	0.5	39	0.51	51	0.5
G/G	33	0.18	15	0.19	18	0.18

rs0270 exact test for Hardy-Weinberg equilibrium (n=179)						
	N11	N12	N22	N1	N2	P-value
All subjects	56	90	33	202	156	0.88
status=0-control	23	39	15	85	69	1
status=1-cece	33	51	18	117	87	1

rs0270 association with response status (n=179, adjusted by age+gender)							
Model	Genotype	status=0-control	status=1-cece	OR (95% CI)	P-value	AIC	BIC
Codominant	A/A	23 (29.9%)	33 (32.4%)	1.00			
	G/A	39 (50.6%)	51 (50%)	0.66 (0.32-1.38)	0.48	234.3	250.3
	G/G	15 (19.5%)	18 (17.6%)	0.64 (0.25-1.62)			
Dominant	A/A	23 (29.9%)	33 (32.4%)	1.00			
	G/A-G/G	54 (70.1%)	69 (67.7%)	0.65 (0.33-1.31)	0.23	232.4	245.1
Recessive	A/A-G/A	62 (80.5%)	84 (82.3%)	1.00			
	G/G	15 (19.5%)	18 (17.6%)	0.82 (0.36-1.85)	0.64	233.6	246.3
Overdominant	A/A-G/G	38 (49.4%)	51 (50%)	1.00			
	G/A	39 (50.6%)	51 (50%)	0.78 (0.41-1.48)	0.45	233.2	246
Log-additive	---	---	---	0.78 (0.49-1.23)	0.29	232.7	245.4

### Interaction analysis with covariate gender

rs0270 and gender cross-classification interaction table (n=179, adjusted by age)						
	FeMale			Male		
	status=0-control	status=1-cece	OR (95% CI)	status=0-control	status=1-cece	OR (95% CI)
<b>A/A</b>	13	20	1.00	10	13	0.83 (0.26-2.60)
<b>G/A</b>	21	36	0.74 (0.29-1.93)	18	15	0.45 (0.16-1.27)
<b>G/G</b>	12	14	0.54 (0.17-1.65)	3	4	0.98 (0.18-5.42)

**Interaction p-value:** 0.54

gender within rs0270 (n=179, adjusted by age)						
A/A		status=0-control	status=1-cece	OR (95% CI)		
FeMale		13	20	1.00		

	<b>Male</b>	10	13	0.83 (0.26-2.60)
<b>status=0-control status=1-cese OR (95% CI)</b>				
<b>G/A</b>	<b>FeMale</b>	21	36	1.00
	<b>Male</b>	18	15	0.60 (0.24-1.51)
<b>status=0-control status=1-cese OR (95% CI)</b>				
<b>G/G</b>	<b>FeMale</b>	12	14	1.00
	<b>Male</b>	3	4	1.82 (0.31-10.65)
<b>Test for interaction in the trend:</b> 0.73				

<b>rs0270 within gender (n=179, adjusted by age)</b>				
<b>status=0-control status=1-cese OR (95% CI)</b>				
<b>FeMale</b>	<b>A/A</b>	13	20	1.00
	<b>G/A</b>	21	36	0.74 (0.29-1.93)
	<b>G/G</b>	12	14	0.54 (0.17-1.65)
<b>status=0-control status=1-cese OR (95% CI)</b>				
<b>Male</b>	<b>A/A</b>	10	13	1.00
	<b>G/A</b>	18	15	0.54 (0.17-1.69)
	<b>G/G</b>	3	4	1.18 (0.20-6.98)
<b>Test for interaction in the trend:</b> 0.54				

## Multiple-SNP analysis

### Linkage disequilibrium analysis

#### D statistic

rs4256	rs0519	rs0270
rs4256	. 0.1947	0.219
rs0519	.	0.1796
rs0270	.	.

#### D' statistic

rs4256	rs0519	rs0270
rs4256	. 0.9998	0.9997
rs0519	.	0.9997
rs0270	.	.

#### r statistic

rs4256	rs0519	rs0270
rs4256	. 0.8578	0.9063
rs0519	.	0.7776
rs0270	.	.

#### P-values

rs4256	rs0519	rs0270
rs4256	.	0 0
rs0519	.	0
rs0270	.	.

### Haplotype analysis

<b>Haplotype frequencies estimation (n=179)</b>							
	<b>rs4256</b>	<b>rs0519</b>	<b>rs0270</b>	<b>Total</b>	<b>group.0.control</b>	<b>group.1.cece</b>	<b>Cumulative frequency</b>
1	A	G	A	0.5642	0.5519	0.5735	0.5642
2	C	A	G	0.3184	0.3182	0.3186	0.8827
3	C	G	G	0.0698	0.0909	0.0539	0.9525
4	A	G	G	0.0475	0.039	0.0539	1

### Haplotype association with response (n=179, adjusted by age+gender)

	<b>rs4256</b>	<b>rs0519</b>	<b>rs0270</b>	<b>Freq</b>	<b>OR (95% CI)</b>	<b>P-value</b>
1	A	G	A	0.5642	1.00	---
2	C	A	G	0.3184	0.83 (0.49 - 1.41)	0.49
3	C	G	G	0.0698	0.56 (0.23 - 1.40)	0.22
4	A	G	G	0.0475	1.00 (0.32 - 3.10)	1

**Global haplotype association p-value:** 0.59

#### Haplotype interaction analysis with covariate gender

<b>Haplotype and gender cross-classification interaction table (n=179, adjusted by age)</b>			
		<b>FeMale</b>	<b>Male</b>
<b>Haplotype</b>	<b>Frequency</b>	<b>OR (95% CI)</b>	<b>OR (95% CI)</b>
<b>AGA</b>	0.5642	1.00	0.68 (0.24 - 1.90)
<b>CAG</b>	0.3184	0.83 (0.44 - 1.58)	0.57 (0.22 - 1.46)
<b>AGG</b>	0.0475	0.80 (0.19 - 3.35)	1.01 (0.16 - 6.41)
<b>CGG</b>	0.0698	0.50 (0.17 - 1.48)	0.54 (0.10 - 3.00)

**Interaction p-value:** 0.93

<b>Haplotypes within gender (n=179, adjusted by age)</b>			
		<b>FeMale</b>	<b>Male</b>
<b>Haplotype</b>	<b>Frequency</b>	<b>OR (95% CI)</b>	<b>OR (95% CI)</b>
<b>AGA</b>	0.5642	1.00	1.00
<b>CAG</b>	0.3184	0.83 (0.44 - 1.58)	0.84 (0.34 - 2.08)
<b>AGG</b>	0.0475	0.80 (0.19 - 3.35)	1.49 (0.23 - 9.53)
<b>CGG</b>	0.0698	0.50 (0.17 - 1.48)	0.79 (0.15 - 4.18)

<b>gender whithin haplotypes (n=179, adjusted by age)</b>			
		<b>FeMale</b>	<b>Male</b>
<b>Haplotype</b>	<b>Frequency</b>	<b>OR (95% CI)</b>	<b>OR (95% CI)</b>
<b>AGA</b>	0.5642	1.00	0.68 (0.24 - 1.90)
<b>CAG</b>	0.3184	1.00	0.68 (0.30 - 1.57)
<b>AGG</b>	0.0475	1.00	1.25 (0.14 - 11.36)
<b>CGG</b>	0.0698	1.00	1.08 (0.16 - 7.31)

<<< Step 3: Customize analysis