

**Supplementary Table 1.****Components of Variation affecting the Eye Roughness Phenotype**

Line	Sex	Mean	s.d.	MS <sub>sex</sub>	MS <sub>pop</sub>	MS <sub>line(pop)</sub>	MS <sub>rep(P × L)</sub>	MS <sub>error</sub>
BL-1564	Male	2.60	0.80	435.6	233.5	8.57	3.87	0.27
BL-1564	Female	2.09	0.81					
BL-5144	Male	1.85	0.68	341.5	1.1	4.82	3.14	0.20
BL-5144	Female	1.41	0.61					

**Supplementary Table 2. Case Control Statistics**

		Site 8196		Site 8535		Site 8541		Site 8697	
		G	T	C	T	C	T	C	T
Phenotype		Counts for Case Control							
High		34	97	86	68	70	84	110	42
Low		30	101	89	54	55	88	123	27
$P(c^2)$		0.56		0.26		0.22		0.046	
$P(G)$		0.56		0.26		0.22		0.045	

**Supplementary Table 3. Significant sites for the main association**

Site	GenBank	-log(p)	Common/Rare Allele	Frequency of rare allele
00654	06065	4.3	G / T	0.14
01085	06410	4.1	C / T	0.08
03418	35391	4.0	G / A	0.31
06889	38816	3.8	C / T	0.12
08196	40119	4.2	T / G	0.42
08535	40458	7.4	C / T	0.49
08541	40464	7.6	T / C	0.48
08697	40620	3.6	C / T	0.32
09633	41556	4.8	C / T	0.19
10322	42241	4.5	C / A	0.35

Information is provided for each of the sites that were significant for the Cross\*Genotype interaction term of the primary association test. Site refers to the site number used for the contig. GenBank refers to the site number for the polymorphism in Genbank record 17571116 (Flybase FBgn000373) for *Egfr*.