

**S11 Table. Mean and standard deviation of proportion of sites with particular number of MAF alleles in the VIKING and LBC cohorts.**

		number MAF alleles in known SNPs							number MAF alleles in ultra-rare SNPs		
		1	2	3	4-5	6-10	11-20	21-50	1	2	3+
VIK	mean	0.190	0.090	0.060	0.077	0.120	0.154	0.320	0.881	0.093	0.027
	s.d.	$5.6 \times 10^{-17}$	$8.4 \times 10^{-17}$	$2.0 \times 10^{-3}$	$4.5 \times 10^{-3}$	$2.0 \times 10^{-16}$	$4.9 \times 10^{-3}$	$2.2 \times 10^{-16}$	$6.8 \times 10^{-3}$	$5.6 \times 10^{-3}$	$4.6 \times 10^{-3}$
LBC	mean	0.220	0.080	0.050	0.070	0.115	0.150	0.310	0.980	0.010	0.010
	s.d.	$1.1 \times 10^{-16}$	$5.6 \times 10^{-17}$	$9.8 \times 10^{-17}$	$8.4 \times 10^{-17}$	$5.0 \times 10^{-3}$	$2.5 \times 10^{-16}$	$5.6 \times 10^{-16}$	$4.5 \times 10^{-16}$	$7.0 \times 10^{-18}$	$7.0 \times 10^{-18}$

  

		number MAF alleles in known INDELs							number MAF alleles in ultra-rare INDELs		
		1	2	3	4-5	6-10	11-20	21-50	1	2	3+
VIK	mean	0.186	0.089	0.057	0.079	0.120	0.160	0.320	0.863	0.096	0.040
	s.d.	$4.9 \times 10^{-3}$	$3.0 \times 10^{-3}$	$4.6 \times 10^{-3}$	$2.6 \times 10^{-3}$	$2.0 \times 10^{-16}$	$1.1 \times 10^{-16}$	$2.2 \times 10^{-16}$	$7.1 \times 10^{-3}$	$6.0 \times 10^{-3}$	$1.4 \times 10^{-3}$
LBC	mean	0.211	0.080	0.050	0.070	0.120	0.150	0.310	0.970	0.010	0.020
	s.d.	$2.9 \times 10^{-3}$	$5.6 \times 10^{-17}$	$9.8 \times 10^{-17}$	$8.4 \times 10^{-17}$	$2.0 \times 10^{-16}$	$2.5 \times 10^{-16}$	$5.6 \times 10^{-16}$	$7.8 \times 10^{-16}$	$1.7 \times 10^{-3}$	$1.4 \times 10^{-17}$