



Using a systematic literature search, we identified 10 genes associated with CMM. We included (1) germline high-frequency genes associated with idiopathic CMM (e.g., CDKN2A, CDK4); (2) germline common mode alleles (e.g., MC1R); (3) germline polymorphisms (e.g., BRAF); and (4) loci-linked genes in sporadic pheochromocytoma (e.g., TRRAP, DCC). Genes were named according to their location in inherited high-penetrance autosomal dominant conditions (n=2); an excess of polymorphic alleles (n=20); an excess of common low-penetrance alleles (n=3); or combination of these (n=4). All alleles (MAF < 1%) associated with the gene were evaluated for enrichment in PD cases compared with innocent controls.

We analyzed high-quality allele frequencies in a large genomic population derived from the Nechip on 6875 PD cases and 6065 controls (dbGaP Study Accession ph000918.1.p1). Compared with the Nechip, the Nechip has a higher proportion of alleles associated with the Illumina genome content and over 1,000 common content Nechip content concentrations. Compared with the Illumina reference genome and

