

1000 Genomes Project

- 1) Search for *OPRM1* and click on the gene ID that is returned. ***OPRM1* is located at chromosome 6: 154,331,631-154,568,001**
- 2) Click on “Region in Detail” and zoom out to view the surrounding areas. *RGS17* is the closest upstream gene. ***IPCEF1* is downstream and actually overlaps with some *OPRM1* isoforms.**
- 3) Go back to the *OPRM1* gene page. Click on “Variation table” on the left. **4248 missense variants have been identified.**

1000 Genomes Project

- 4) Search the database for rs1799971 and click through to the SNP page. Click on “Population genetics”. Click on the “Sub-populations” button under the AFR and EUR parent populations. **The SNP is present at 5% in ASW and 15% in CEU**
- 5) Go back to the rs1799971 page. Click on “Linkage disequilibrium”. Click the show buttons under “Linked variations table” for both ASW and CEU. **ASW have 4 SNPs in linkage disequilibrium with rs1799971, while CEU have 21.**
- Bonus question: African populations have smaller haplotype blocks than European populations due to the relative ages of the populations.

1000 Genomes Project

- 6) Go to the *OPRM1* page like before. Go to “Get VCF data” on the left. Under VCF filters, select “by population(s)”. Click next, select ASW on the subsequent screen, and click next again. A link to download your file will appear when it’s completed. *Don’t download it since it’s huge.*