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* Identify genes reported to be associated with “**Otitis media**”.
* Identify a SNP present in the regulatory region of a gene that has been associated with **Alzheimer’s disease** and report supporting publication(s).
* Mutations in the **BRCA1** gene are reported to be associated with the early onset of breast cancer.
	+ Retrieve all non-synonymous and validated coding reference SNPs for BRCA1.
* Find the genomic location of **rs7341475.**
	+ What is the frequency of A/G genotype in the Asian population?
	+ Can you comment on the significance of this polymorphism?
* Mutations in the Dopamine Receptor 5 (**DRD5**) gene have been observed in patients with various neurological disorders.
	+ Search dbSNP and find how many refSNP records have been reported for DRD5.
	+ Show all refSNPs in the context of a chromosome.
* Generate an integrated variation map with reference SNPs, Mitelman breakpoints and OMIM diseases for **chromosome 17; region 7,773,000 – 7,792,000 bp**.
	+ What gene(s) have you found in this region?
* Find the genomic region for the human **NRAS** [neuroblastoma RAS viral (v-ras) oncogene homolog] gene.
	+ Add 1000 bases to each end of the position in the window.
	+ Turn on a Transcription Factor Binding Site (TFBS Conserved) track and look for possible binding sites in the promoter region.
	+ Determine if structural variation has been indicated in this genomic region by visualizing the copy number variation (CNV) data from the DGV database track.
	+ Retrieve the genomic sequence of this region highlighting all non-synonymous SNPs in bold red.
* Germ line mutations in the **BRCA1** gene (U14680) lead to the predisposition to breast and ovarian cancer.
	+ A single point mutation, a G to T substitution in exon 18 at nucleotide 5199 (codon 1694) has been observed in a group of breast and ovarian cancer patients.
	+ This mutation changes a glutamic acid to a stop codon (Glu 1694 ter).
	+ Further study revealed that instead of expressing any transcript with exon 18 containing stop codon, the mutant allele produces only mRNA in which the entire exon 18 has been skipped.
	+ Explain the cause of this exon-skipping phenomenon.