NHGRI GWAS Catalog (2005-2011) = 5903 Entries 4,789 Unique GWAS SNPs 342 Diseases/Traits 745 GWAS Publications

Filter by blood lipid related traits: LDL, HDL, TG, HDL-TG, total cholesterol, cholesterol, lipid metabolism, TG-BP, response to statin



Blood lipid-related traits = 535 Entries 293 Unique GWAS SNPs 24 GWAS publications



Remove studies based on non-European/European American subjects

Studies with European/European American subjects = 490 Entries 260 Unique GWAS SNPs 19 GWAS publications 140 independent GWAS signals (>100 kb apart)

Expand by including SNPs in LD (HapMap CEU,  $r^2 > 0.3$ )



6,230 SNPs



Search for enhancer-like epigenetic markings in the 500 bp region containing the SNP in HepG2 cells

34 unique putative eSNP from 69 unique GWAS SNPs

Filter by LD to select putative enhancer for experimental validation ( $r^2 > 0.8$  and D'> 0.9)



16 unique putative eSNPs from 36 GWAS SNPs



Remove 9 SNPs located within predicted promoters

7 putative eSNPs located in intronic, 5', 3' or intergenic regions that were cloned and tested in luciferase assay (HepG2 and Huh-7 cells)

S1 Fig. From GWAS signals to liver-specific eSNPs.