Human genes and coffee beans

DOI: 10.1038/MP.2014.107

Six new regions (loci) of DNA associated with coffee drinking behaviour are reported in a study published in Molecular Psychiatry. The findings support the role of caffeine in influencing regular coffee drinking and suggest molecular mechanisms that may underlie why a given amount of coffee or caffeine has different effects on different people.

Marilyn Cornelis and colleagues conducted a genome-wide association study of coffee consumption among over 120,000 individuals of European and African-American ancestry. The authors
implicate two new genes involved in caffeine metabolism: POR and ABCG2. Two additional loci were identified near genes BDNF and SLC6A4 that potentially influence the effects caffeine has on the brain. The authors also identified loci near GCKR and MLXIPL, genes involved in glucose and lipid metabolism but not previously linked to either metabolism or the neurological effects of coffee. The authors suggest that variations in GCKR may impact the glucose-sensing process of the brain which may in turn influence responses to caffeine or some other component of coffee. However, further studies are required to determine the effects of these two loci on coffee drinking behaviour.

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Please link to the scientific paper in online versions of your report (the URL will go live after the embargo ends): http://dx.doi.org/10.1038/MP.2014.107

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