Dokumenttyp: journal article

Autor(en) des Beitrags:

Suhre, K; Shin, SY; Petersen, AK; Mohney, RP; Meredith, D; Wägele, B; Altmäier, E; CARDIoGRAM; Deloukas, P; Erdmann, J; Grundberg, E; Hammond, CJ; de Angelis, MH; Kastenmüller, G; Köttgen, A; Kronenberg, F; Mangino, M; Meisinger, C; Meitinger, T; Mewes, HW; Milburn, MV; Prehn, C; Raffler, J; Ried, JS; Römisch-Margl, W; Samani, NJ; Small, KS; Wichmann, HE; Zhai, G; Illig, T; Spector, TD; Adamski, J; Soranzo, N; Gieger, C; Kathiresan, S; Reilly, MP; Samani, NJ; Schunkert, H; Erdmann, J; Assimes, TL; Boerwinkle, E; Erdmann, J; Hall, A; Hengstenberg, C; Kathiresan, S; König, IR; Laaksonen, R; McPherson, R; Reilly, MP; Samani, NJ; Schunkert, H; Thompson, JR; Thorsteinsdottir, U; Ziegler, A; König, IR; Thompson, JR; Absher, D; Chen, L; Cupples, LA; Halperin, E; Li, M; Musunuru, K; Preuss, M; Schillert, A; Thorleifsson, G; Voight, BF; Wells, GA; Absher, D; Assimes, TL; Deloukas, P; Erdmann, J; Holm, H; Kathiresan, S; König, IR; McPherson, R; Reilly, MP; Roberts, R; Samani, NJ; Schunkert, H; Stewart, AF; Fortmann, S; Go, A; Hlatky, M; Iribarren, C; Knowles, J; Myers, R; Quertermous, T; Sidney, S; Risch, N; Tang, H; Blankenberg, S; Zeller, T; Schillert, A; Wild, P; Ziegler, A; Schnabel, R; Sinning, C; Lackner, K; Treti, L; Nicaud, V; Cambien, F; Bickel, C; Rupprecht, HJ; Perret, C; Proust, C; Münzel, T; Barbalic, M; Bis, J; Boerwinkle, E; Chen, IY; Cupples, LA; Dehghan, A; Demissie-Banjaw, S; Folsom, A; Glazer, N; Gudnason, V; Harris, T; Heckbert, S; Levy, D; Lumley, T; Marcianke, K; Morrison, A; O'Donnell, CJ; Psaty, BM; Rice, K; Rotter, JL; Siscovick, DS; Smith, N; Smith, A; Taylor, KD; van Duijn, C; Volcik, K; Whitteman, J; Ramachandran, V; Hofman, A; Uitterlinden, A; Gretarsdottir, S;
Gulcher, JR; Holm, H; Kong, A; Stefansson, K; Thorgeirsson, G; Andersen, K; Thorleifsson, G; Thorsteinsdottir, U; Erdmann, J; Fischer, M; Grosshennig, A; Hengstenberg, C; König, IR; Lieb, W; Linsel-Nitschke, P; Preuss, M; Stark, K; Schreiber, S; Wichmann, HE; Ziegler, A; Schunkert, H; Aherrahrou, Z; Bruse, P; Doering, A; Erdmann, J; Hengstenberg, C; Illig, T; Klopp, N; König, IR; Linsel-Nitschke, P; Loley, C; Medack, A; Meisinger, C; Meitinger, T; Nahrstedt, J; Peters, A; Preuss, M; Stark, K; Wagner, AK; Wichmann, HE; Willenborg, C; Ziegler, A; Schunkert, H; Böhm, BO; Dobnig, H; Grammer, TB; Halperin, E; Hoffmann, MM; Kleber, M; Laaksonen, R; Márz, W; Meinitzer, A; Winkelmann, BR; Pilz, S; Renner, W; Scharnagl, H; Stojakovic, T; Tomaszitz, A; Winkler, K; Voight, BF; Musunuru, K; Guiducci, C; Burtt, N; Gabriel, SB; Siscovick, DS; O'Donnell, CJ; Eloisa, R; Peltonen, L; Salomaa, V; Schwartz, SM; Melander, O; Altshuler, D; Kathiresan, S; Stewart, AF; Chen, L; Dandona, S; Wells, GA; Jariño, O; McPherson, R; Roberts, R; Reilly, MP; Li; M; Qu, L; Wilensky, R; Matthai, W; Hakonarson, HH; Devaney, J; Burnett, MS; Pichard, AD; Kent, KM; Sattler, L; Lindsay, JM; Waksman, R; Knouff, CW; Waterworth, DM; Walker, MC; Mooser, V; Epstein, SE; Rader, DJ; Samani, NJ; Thompson, JR; Braund, PS; Nelson, CP; Wright, BJ; Balmforth, AJ; Ball, SG; Hall, AS

Titel des Beitrags:
Human metabolic individuality in biomedical and pharmaceutical research.

Abstract:
Genome-wide association studies (GWAS) have identified many risk loci for complex diseases, but effect sizes are typically small and information on the underlying biological processes is often lacking. Associations with metabolic traits as functional intermediates can overcome these problems and potentially inform individualized therapy. Here we report a comprehensive analysis of genotype-dependent metabolic phenotypes using a GWAS with non-targeted metabolomics. We identified 37 genetic loci associated with blood metabolite concentrations, of which 25 show effect sizes that are unusually high for GWAS and account for 10-60% differences in metabolite levels per allele copy. Our associations provide new functional insights for many disease-related associations that have been reported in previous studies, including those for cardiovascular and kidney disorders, type 2 diabetes, cancer, gout, venous thromboembolism and Crohn's disease. The study advances our knowledge of the genetic basis of metabolic individuality in humans and generates many new hypotheses for biomedical and pharmaceutical research.

Zeitschriftentitel / Abkürzung:
Nature

Jahr:
2011

Band:
477

Heft / Issue:
7362

Seiten:
54-60

Sprache:
eng

Pubmed:

Print-ISSN:
0028-0836

TUM Einrichtung:
r Humangenetik

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Institut für Humangenetik > 2011

entries: