**Supplemental Table 2**. Significant KEGG pathway of nearest genes.

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| **Pathway Name** | **#Gene** | **Statistics** |
| Amoebiasis | 5 | C=106;O=5;E=0.48;R=10.33;rawP=0.0001;adjP=0.0010 |
| Melanogenesis | 5 | C=101;O=5;E=0.46;R=10.84;rawP=0.0001;adjP=0.0010 |
| Pathways in cancer | 8 | C=326;O=8;E=1.49;R=5.37;rawP=0.0001;adjP=0.0010 |
| Focal adhesion | 7 | C=200;O=7;E=0.91;R=7.66;rawP=4.05e-05;adjP=0.0010 |
| Pancreatic secretion | 5 | C=101;O=5;E=0.46;R=10.84;rawP=0.0001;adjP=0.0010 |
| TGF-beta signaling pathway | 4 | C=84;O=4;E=0.38;R=10.42;rawP=0.0006;adjP=0.0043 |
| ECM-receptor interaction | 4 | C=85;O=4;E=0.39;R=10.30;rawP=0.0006;adjP=0.0043 |
| Notch signaling pathway | 3 | C=47;O=3;E=0.21;R=13.97;rawP=0.0013;adjP=0.0081 |
| Vibrio cholerae infection | 3 | C=54;O=3;E=0.25;R=12.16;rawP=0.0020;adjP=0.0111 |
| Cell cycle | 4 | C=124;O=4;E=0.57;R=7.06;rawP=0.0026;adjP=0.0130 |
| Phagosome | 4 | C=153;O=4;E=0.70;R=5.72;rawP=0.0055;adjP=0.0196 |
| Wnt signaling pathway | 4 | C=150;O=4;E=0.69;R=5.84;rawP=0.0051;adjP=0.0196 |
| Adherens junction | 3 | C=73;O=3;E=0.33;R=9.00;rawP=0.0046;adjP=0.0196 |
| Gastric acid secretion | 3 | C=74;O=3;E=0.34;R=8.88;rawP=0.0048;adjP=0.0196 |
| Small cell lung cancer | 3 | C=85;O=3;E=0.39;R=7.73;rawP=0.0070;adjP=0.0233 |
| Salivary secretion | 3 | C=89;O=3;E=0.41;R=7.38;rawP=0.0080;adjP=0.0250 |
| Primary immunodeficiency | 2 | C=35;O=2;E=0.16;R=12.51;rawP=0.0112;adjP=0.0329 |
| Vascular smooth muscle contraction | 3 | C=116;O=3;E=0.53;R=5.66;rawP=0.0163;adjP=0.0453 |
| ABC transporters | 2 | C=44;O=2;E=0.20;R=9.95;rawP=0.0173;adjP=0.0455 |