Fig. S1  Immunofluorescent staining of Fat1 compared with control rabbit IgG. Wild-type mouse lens paraffin sections (E14.5) were immunostained with anti-Fat1 antibody and 5 µg/mL rabbit IgG. The apical cell junctional (arrowheads) and membrane staining of Fat1 which colocalize with β-catenin signal were not detected with control IgG. Scale bar: 20 µm.
**Fig. S2**  **Expression pattern of Dchs1 and Fjx1 during eye development.** Cryosections of mouse embryos were processed for *in situ* hybridization with Dchs1 (A-G) and Fjx1 (H-N) probes at E9.5 (A, H), E10.5 (B, I), E11.5 (C, J), E12.5 (D, K), E14.5 (E, L) and E18.5 (F, G, M, N). Dchs1 expression was mainly found in mesenchymal cells outside of eye region during early stages (A-C). At E12.5, Dchs1 signal was stronger in the inner layer of the retina posterior to the lens (D, arrowhead) and at later stages of development, Dchs1 signal was confined to the inner layer of retina and eventually resolved into two laminae by E18.5 (E-G, arrowheads). In contrast, at all stages examined, Dchs1 signal was very low or absent in the lens (D-G). Fjx1 expression appeared weak or absent in the lens placode at E9.5 (H) but a transient strong induction of Fjx1 was detected in some lens pit cells at E10.5 (I, arrow) and most lens vesicle cells at E11.5 (J, arrow). At E12.5, Fjx1 was weakly detected in the germinative zone lens epithelial cells anterior to the lens equator (K, arrows). After this stage Fjx1 was not detected in lens epithelial cells but was maintained in the fibers through E14.5 to E18.5 with the more mature fibers in the center of the lens progressively showing diminished expression compared with younger fibers at the lens equator (L, M). Fjx1 expression was detected in the inner region of the optic cup at E12.5 (K, arrowhead) and was restricted to the inner layer of the neural retina at E18.5 (N, arrowhead). Scale bars: A, B, H, I 200 µm; C, J 100 µm, D-F, K-M 100 µm; G, N 100 µm.
<table>
<thead>
<tr>
<th>Gene</th>
<th>Region</th>
<th>Size (bp)</th>
<th>Primer name and sequence</th>
</tr>
</thead>
</table>
| Fat1 | Exon 22-24 500 | Fat1 T3-Fw 12195/12214  
Fat1 T7-Rv 12695/12676  
TAATACGACTCACTATAGGGCTCTGCAAGAAAGCGGTGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAAGGCTCTGCAAGAAAGCGGTGTT |
| Fat1 | Exon 1 459 | Fat1 T3-Fw 1146/1165  
Fat1 T7-Rv 1605/1586  
TAATACGACTCACTATAGGGCTACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTACACCGGACATCATGTT |
| Fat4 | Exon 9 547 | Fat4 T3-Fw 10898/10917  
Fat4 T7-Rv 11445/11426  
TAATACGACTCACTATAGGGCTTTGACACCGGCCCATGAA | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTTTGACACCGGCCCATGAA |
| Fat4 | Exon 17 547 | Fat4 T3-Fw 14054/14073  
Fat4 T7-Rv 14601/14582  
TAATACGACTCACTATAGGGCTACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTACACCGGACATCATGTT |
| Dchs1 | Exon 21 493 | Dchs1 T3-Fw 8437/8456  
Dchs1 T7-Rv 8930/8911  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT |
| Dchs1 | Exon 21 526 | Dchs1 T3-Fw 9321/9340  
Dchs1 T7-Rv 9847/9828  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT |
| Fjx1 | Exon 1* 508 | Fjx1 T3-Fw 41/59  
Fjx1 T7-Rv 549/530  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT |
| Fjx1 | Exon 1* 541 | Fjx1 T3-Fw 555/574  
Fjx1 T7-Rv 1096/1077  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT | AATTAACCCTCACTAAAGGCGGGAGGAACGTGCATGGTAG  
TAATACGACTCACTATAGGGCTTTGACACCGGACATCATGTT |

*Fjx1 has one exon.

Bold letters correspond to T7 or T3 sequences to give access site for T7 (for anti-sense probes) or T3 (for sense probes) RNA polymerase. Underscored letters indicate shared sequence between T3/T7 sequence and genomic sequences.