Table S5. *gpa-3*(lf) and *gpa-3QL* affect transport rates in the cilia

<table>
<thead>
<tr>
<th>IFT protein</th>
<th>genotype</th>
<th>Middle segments</th>
<th></th>
<th>Distal segments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>speed ± SD$^p$</td>
<td>part</td>
<td>cilia</td>
<td>speed ± SD$^p$</td>
</tr>
<tr>
<td>OSM-3::GFP</td>
<td><em>osm-3(p802)</em></td>
<td>0.70 ± 0.19</td>
<td>192</td>
<td>18</td>
<td>1.07 ± 0.23</td>
</tr>
<tr>
<td></td>
<td><em>kap-1(ok676)</em></td>
<td>1.17 ± 0.24$^1$</td>
<td>130</td>
<td>11</td>
<td>1.23 ± 0.28</td>
</tr>
<tr>
<td></td>
<td><em>osm-3; gpa-3(pk35)</em></td>
<td>0.97 ± 0.26$^{1,3,7}$</td>
<td>137</td>
<td>11</td>
<td>1.12 ± 0.45</td>
</tr>
<tr>
<td></td>
<td><em>kap-1; gpa-3(pk35)</em></td>
<td>1.17 ± 0.31$^{1,4}$</td>
<td>205</td>
<td>15</td>
<td>1.17 ± 0.27</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs24)</em></td>
<td>1.09 ± 0.19$^7$</td>
<td>123</td>
<td>10</td>
<td>1.12 ± 0.18</td>
</tr>
<tr>
<td></td>
<td><em>kap-1; gpa-3QL(syIs24)</em></td>
<td>1.19 ± 0.32$^{1,5}$</td>
<td>231</td>
<td>19</td>
<td>1.16 ± 0.41</td>
</tr>
<tr>
<td></td>
<td><em>osm-3; gpa-3QL(syIs25)</em></td>
<td>0.92 ± 0.27$^{1,3,7}$</td>
<td>162</td>
<td>10</td>
<td>1.10 ± 0.31</td>
</tr>
<tr>
<td>KAP-1::GFP</td>
<td><em>kap-1</em></td>
<td>0.70 ± 0.14</td>
<td>194</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>osm-3</em></td>
<td>0.49 ± 0.10$^1$</td>
<td>91</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>osm-3; gpa-3(pk35)</em></td>
<td>0.59 ± 0.19$^{2,6}$</td>
<td>130</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>kap-1; gpa-3(pk35)</em></td>
<td>0.51 ± 0.14$^1$</td>
<td>181</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs24)</em></td>
<td>0.62 ± 0.17$^6$</td>
<td>130</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>kap-1; gpa-3QL(syIs25)</em></td>
<td>0.63 ± 0.17$^6$</td>
<td>122</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>osm-3; gpa-3QL(syIs25)</em></td>
<td>0.50 ± 0.12$^1$</td>
<td>183</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>CHE-11::GFP</td>
<td><em>che-11(e1810)</em></td>
<td>0.69 ± 0.21</td>
<td>118</td>
<td>13</td>
<td>1.20 ± 0.28</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3(pk35)</em></td>
<td>0.78 ± 0.16$^{6,7}$</td>
<td>190</td>
<td>16</td>
<td>1.22 ± 0.33</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs24)</em></td>
<td>0.70 ± 0.17$^6$</td>
<td>282</td>
<td>19</td>
<td>1.17 ± 0.20</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs25)</em></td>
<td>0.73 ± 0.23$^6$</td>
<td>222</td>
<td>18</td>
<td>1.11 ± 0.22</td>
</tr>
<tr>
<td>OSM-1::GFP</td>
<td><em>osm-1(p808)</em></td>
<td>0.70 ± 0.26</td>
<td>224</td>
<td>16</td>
<td>1.10 ± 0.30</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3(pk35)</em></td>
<td>0.80 ± 0.20$^{1,6,7}$</td>
<td>196</td>
<td>14</td>
<td>1.17 ± 0.26</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs24)</em></td>
<td>0.79 ± 0.21$^{2,6,7}$</td>
<td>233</td>
<td>17</td>
<td>1.12 ± 0.23</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs25)</em></td>
<td>0.77 ± 0.27$^{6,7}$</td>
<td>201</td>
<td>13</td>
<td>1.09 ± 0.18</td>
</tr>
<tr>
<td>XBX-1::GFP</td>
<td><em>xbx-1(ok279)</em></td>
<td>0.70 ± 0.17</td>
<td>141</td>
<td>12</td>
<td>1.11 ± 0.19</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3(pk35)</em></td>
<td>0.77 ± 0.23$^{3,6,7}$</td>
<td>202</td>
<td>15</td>
<td>1.14 ± 0.23</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs24)</em></td>
<td>0.73 ± 0.23$^{3,6,8}$</td>
<td>183</td>
<td>13</td>
<td>1.13 ± 0.27</td>
</tr>
<tr>
<td></td>
<td><em>gpa-3QL(syIs25)</em></td>
<td>0.73 ± 0.18$^6$</td>
<td>159</td>
<td>14</td>
<td>1.12 ± 0.28</td>
</tr>
</tbody>
</table>

Indicated are average speeds in the middle and distal segments ± the standard deviation (in m/s), the number of tracks (part), and the number of examined cilia. P-values are indicated with numbers, comparing speeds of: 1 & 2 IFT protein in a mutant to the same IFT protein in wild type (1: p<0.001, 2: p<0.005), 3 OSM-3::GFP in *gpa-3* mutants to *kap-1* (p<0.001), 4 & 5 OSM-3::GFP in *kap-1*; *gpa-3* (lf or QL) doubles to the respective *gpa-3* single mutant (4: p<0.001, 5: p<0.005); 6 IFT protein in *gpa-3* mutant compared to OSM-3::GFP in the same *gpa-3* mutant (6: p<0.001); 7 & 8 IFT protein in *gpa-3* mutant compared to KAP-1::GFP in the same *gpa-3* mutant (7: p<0.001, 8: p<0.005). Speeds were determined in adult animals.