

**Table S1.** Gene function and pathway for the SNP and PA loci of the snakeskin gourami (*Trichopodus pectoralis*); 70:30 (males:females).

| Locus ID    | Gene          | Product   | Function                                  | Component                   |
|-------------|---------------|---|---|-----------------------------|
| PA34229094  | <i>CFAP92</i> | cilia and flagella associated protein 92 (putative) | unknown                                   | unknown                     |
| PA34229328  | <i>ZIC3</i>   | Zic family member 3                                 | DNA-binding transcription factor activity | nucleus                     |
| PA34229500  | <i>XIRP2</i>  | Xin actin binding repeat containing 2               | actin filament binding                    | Z disc                      |
| PA34231211  | <i>PATJ</i>   | PATJ crumbs cell polarity complex component         | protein binding                           | cell junction               |
| SNP34230514 | <i>NEB</i>    | nebulin   | actin filament binding                    | actin cytoskeleton          |
| SNP34231029 | <i>IFT88</i>  | intraflagellar transport 88 homolog                 | kinesin binding                           | sperm flagellum             |
| SNP34231506 | <i>IL4</i>    | interleukin 4                                       | cytokine activity                         | extracellular space         |
|             | <i>IL13</i>   | interleukin 13                                      | cytokine activity                         | extracellular space         |
| SNP34231653 | <i>PLA2R1</i> | phospholipase A2 receptor 1                         | signaling receptor activity               | signaling receptor activity |
| SNP34231739 | <i>NEMF</i>   | nuclear export mediator factor                      | signaling receptor activity               | nucleus                     |

**Table S2.** Homologies of the SNP and PA loci in the snakeskin gourami (*Trichopodus pectoralis*); 70:30 (males: females)

| Locus ID    | Gene   | Product   | Species                                  | Region             | Reference               |
|-------------|--------|---|--|--------------------|-------------------------|
| PA34229094  | CFAP92 | cilia and flagella associated protein 92 (putative) | <i>Ornithorhynchus anatinus</i>          | X1 chromosome, CDS | Shaffer et al. (2013)   |
| PA34229328  | ZIC3   | Zic family member 3                                 | <i>Podarcis muralis</i>                  | Z chromosome, CDS  | Rovatsos et al. (2016)  |
|             |        |   | <i>Homo sapiens</i>                      | X chromosome, CDS  | Paulussen et al. (2016) |
|             |        |   | <i>Pan troglodytes</i>                   | X chromosome, CDS  | Paulussen et al. (2016) |
|             |        |   | <i>Equus caballus</i>                    | X chromosome, CDS  | Paulussen et al. (2016) |
|             |        |   | <i>Felis catus</i>                       | X chromosome, CDS  | Paulussen et al. (2016) |
|             |        |   | <i>Mus musculus</i><br>(Mammalian group) | X chromosome, CDS  | Paulussen et al. (2016) |
| SNP34231029 | IFT88  | intraflagellar transport 88 homolog                 | <i>Piliocolobus tephrosceles</i>         | X chromosome, CDS  | Goldberg et al. (2009)  |
| SNP34231506 | IL13   | interleukin 13                                      | <i>Ornithorhynchus anatinus</i>          | X1chromosome, CDS  | Herzberg et al. (2020)  |

CDS; coding sequence

Shaffer, J.R.; Feingold, E.; Wang, X.; Lee, M.; Tcuenco, K.; Weeks, D.E.; Weyant, R.J.; Crout, R.; McNeil, D.W.; Marazita, M.L. GWAS of dental caries patterns in the permanent dentition. *J. Dent. Res.* **2013**, *92*, 38–44. <https://doi.org/10.1177/0022034512463579>.

Rovatsos, M.; Vukić, J.; Altmanová, M.; Johnson Pokorná, M.; Moravec, J.; Kratochvíl, L. Conservation of sex chromosomes in lacertid lizards. *Mol. Ecol.* **2016**, *25*, 3120–3126. <https://doi.org/10.1111/mec.13635>.

Paulussen, A.D.; Steyls, A.; Vanoevelen, J.; Van Tienen, F.H.; Krapels, I.P.; Claes, G.R.; Chocron, S.; Velter, C.; Tan-Sindhunata, G.M.; Lundin, C.; et al. Rare novel variants in the ZIC3 gene cause X-linked heterotaxy. *European Journal of Human Genetics* **2016**, *24*, 1783–1791.

Goldberg, T.L.; Sintasath, D.M.; Chapman, C.A.; Cameron, K.M.; Karesh, W.B.; Tang, S.; Wolfe, N.D.; Rwego I.B.; Ting, N.; Switzer, W. M. Coinfection of Ugandan red colobus (*Procolobus [Piliocolobus] rufomitratus tephrosceles*) with novel, divergent delta-, lenti-, and spumaretroviruses. *Journal of virology*, **2009**, *83*, 11318–11329. <https://doi.org/10.1128/JVI.02616-08>.

Herzberg, D.; Strobel, P.; Ramirez-Reveco, A.; Werner, M.; Bustamante, H. Chronic inflammatory lameness increases cytokine concentration in the spinal cord of dairy cows. *Front. vet. Sci.* **2020**, *7*, 125. <https://doi.org/10.3389/fvets.2020.00125>.

**Table S3.** Chromosomal locations of the SNP and PA loci in the snakeskin gourami (*Trichopodus pectoralis*), as determined by BLAST analysis with the Japanese rice fish (*Oryzias latipes*), zebrafish (*Danio rerio*), Japanese puffer fish (*Takifugu rubripes*), and chicken (*Gallus gallus*) genomes; 70:30 (male:female)

| Locus ID    | <i>Oryzias latipes</i> | <i>Danio rerio</i> | <i>Takifugu rubripes</i> | <i>Gallus gallus</i> |
|-------------|------------------------|--------------------|--------------------------|----------------------|
| SNP34232220 | 7                      | 19                 | 1                        | -                    |
| SNP34231743 | 24                     | -                  | 22                       | Z                    |
| SNP34230661 | -                      | -                  | -                        | -                    |
| SNP34231029 | 17                     | 7                  | -                        | -                    |
| SNP34230447 | -                      | -                  | -                        | -                    |
| SNP34233059 | 6                      | 21                 | 8                        | Z                    |
| SNP34231653 | 3                      | -                  | 22                       | Z                    |
| SNP34230251 | 3                      | 10                 | -                        | -                    |
| SNP34232435 | 11                     | 14                 | -                        | -                    |
| SNP34232453 | 8                      | -                  | -                        | -                    |
| SNP34231900 | 20                     | -                  | 22                       | -                    |
| SNP34232172 | -                      | 5                  | -                        | -                    |
| SNP34231739 | 1                      | -                  | 2                        | -                    |
| SNP34230514 | 21                     | 3                  | 1                        | -                    |
| SNP34231620 | 7                      | 2                  | 4                        | Z                    |
| SNP34231235 | 13                     | -                  | -                        | Z                    |
| SNP34230342 | 2                      | -                  | 4                        | Z                    |
| SNP34231567 | 22                     | 10                 | 21                       | Z                    |
| SNP34232420 | 22                     | 25                 | 7                        | -                    |
| SNP34231506 | 13                     | -                  | -                        | Z                    |
| SNP34230800 | -                      | 5                  | 22                       | Z                    |
| SNP34232595 | -                      | -                  | -                        | -                    |
| PA34227683  | 4                      | 10                 | 19                       | W                    |
| PA34228377  | 8                      | 5                  | 7                        | -                    |
| PA34228952  | 7                      | -                  | 22                       | Z                    |
| PA34232510  | 19                     | 17                 | -                        | -                    |
| PA34232084  | 19                     | 13                 | 1                        | -                    |
| PA34231211  | 21                     | 22                 | 8                        | Z                    |
| PA34228386  | 4                      | -                  | 8                        | -                    |
| PA34228547  | 17                     | -                  | 11                       | -                    |
| PA34229216  | -                      | 5                  | 17                       | -                    |
| PA34229328  | -                      | 7                  | 1                        | -                    |
| PA34229492  | 1                      | 5                  | 15                       | -                    |
| PA34229645  | 5                      | 21                 | 14                       | Z                    |
| PA34231120  | 16                     | -                  | 7                        | -                    |
| PA34229500  | 11                     | 19                 | 16                       | Z                    |
| PA34227667  | 11                     | 1                  | 20                       | Z                    |
| PA34229094  | 20                     | 11                 | 22                       | Z                    |
| PA34228769  | 4                      | -                  | 3                        | W                    |

**Table S4.** Chromosomal locations of the SNP and PA loci in the snakeskin gourami (*Trichopodus pectoralis*), as determined by BLAST analysis against the genomes of the Japanese rice fish (*Oryzias latipes*), zebrafish (*Danio rerio*), Japanese puffer fish (*Takifugu rubripes*), and chicken (*Gallus gallus*); 80:20 (male: female)

| Locus ID    | <i>Oryzias latipes</i> | <i>Danio rerio</i> | <i>Takifugu rubripes</i> | <i>Gallus gallus</i> |
|-------------|------------------------|--------------------|--------------------------|----------------------|
| SNP34231029 | 17                     | 7                  | -                        | -                    |
| SNP34230447 | -                      | -                  | -                        | -                    |
| SNP34233059 | 6                      | 21                 | 8                        | Z                    |
| PA34227667  | 11                     | 1                  | 20                       | Z                    |
| PA34229094  | 20                     | 11                 | 22                       | Z                    |
| PA34228769  | 4                      | -                  | 3                        | W                    |