**Supplemental Table 4. Differences in CNSS activity between FW and SW teleost species**

Abbreviations: Ach, acetylcholine; FW, freshwater; POA, preoptic area; PTHrP and *pthrp*, parathyroid hormone-related protein; STC-1 and *stc-1*, stanniocalcin; SW, seawater; UI and *uts1*, urotensin I; UII and *uts2*, urotensin II; *uts2r1*, UII receptor.

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| **FW (hypotonic milieu)** | **SW (hypertonic milieu)** | **Observations** | **References** |
| Common carp *Cyprinus carpio*  Goldfish *Carassius carassius* | Japanese seabass *Lateolabrax japonicus*  Blackhead seabream *Acanthopagrus schlegelii*  Fat greenling *Hexagrammos otakii* | Lower urophysial ACh content in SW than in FW animals | [260] |
| Common carp  Goldfish  Big-scaled redfin *Tribolodon hakonensis* | Blackmouth angler *Lophiomus setigerus* | Lower urophysial ACh content in SW than in FW animals | [262] |
| Common carp  Goldfish  Mozambique tilapia *Oreochromis mossambicus*  Nile tilapia *Oreochromis niloticus*  Rainbow trout *Salmo gairdneri*  Ayu sweetfish *Plecoglossus altivelis* | Yellowfin goby *Acanthogobius flavimanus*  Red sea bream *Pagrus major*  Chicken grunt *Parapristipoma trilineatum,*  Japanese jack mackerel *Trachurus japonicus*  Greater amberjack *Seriola dumerili*  Japanese amberjack *Seriola quinqueradiata* | Higher urophysial UII immunoreactivity in SW than in FW animals | [321] |
| Bonefish *Albula vulpes* in oceanic ponds (subject to rain runoff from the land = wide variations in salinity) | Bonefish *Albula* vulpes in the open sea | Larger proportion of caudal neurosecretory cells showing signs of active production  Higher amount of secretory material in urophysis of pond fish than in open sea fish  More developped vascular bed in urophysis of pond fish than in open sea fish | [290] |
| Migrating Pacific salmon  in brakish water | Migrating Pacific salmon in ocean | Higher urophysial UII content in fish in ocean than in fish in brakish water | [322] |
| Fully acclimated-European flounder *Platichthys flesus* (2weeks) | Fully acclimated-European flounder *Platichthys flesus* (2 weeks) | Higher urophysial UI-UII content in SW than in FW animals  Higher bioassayable UII content in SW than in FW animals | [171] |
| No difference in CNSS *pthrp* gene expression | [227] |
| July: no difference in UII plasma and CNSS *ust2* mRNA levels; lower urophysial UII content in SW than in FW animals; higher gill and kidney *uts2r1* mRNA levels in SW than in FW animals  September: no change in UII plasma and CNSS *uts2* mRNA levels; higher urophysial UII content in SW than in FW animals; no difference in gill and kidney *uts2r1* mRNA levels | [135] |
| Higher *stc-1* mRNA levels in SW than in FW animals  No difference in plasma STC-1 concentration | [248] |
| No difference in CNSS *pthrpa* and *pthrb* mRNA levels and plasma PTHrP levels | [228] |
| July and September: no difference in CNSS *uts1* mRNA levels and urophysial UI content | [326] |