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***Challenging the paradigm of an amniote-restricted mesonephric contribution to the gonad.
-of the pronephric field contribution to the gonads in teleosts-***

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Despite the fact that diverse systems, various upstream determinants and plastic gene regulatory networks trigger gonadal formation amongst vertebrates, the adult gonads are however very similar in morphology, cellular organization and physiology. Whether common ontophylogenetic process occasionally canalize this organismal convergence is unknown.

While the archetypal amniote primordial gonads are derived on the surface of the mesonephros from the intermediate mesoderm, and rapidly develop into two rudimentary compartments, -the cortex and the medulla-, the source of medullar cell precursors remains a controversial aspect of gonadal development. Especially, the possible recruitment of underlying cells from the mesonephros to the epithelial population and their respective final contribution to the whole gonad amongst vertebrates is still a matter of debate. While teleost gonads have many features in common with those of other vertebrates, the general understanding is that teleost gonads originate only from one primordium, the cortex or peritoneal wall. Hence, unlike in other amniote vertebrates, the early gonad does not –or would not- have any equivalent to the medulla that is derived from the interrenal or mesonephric blastema.

However, our data using fluorescent transgenic reporter medaka lines, *in vivo* cell lineage tracing, single cell analyses and gain/loss of function challenge this paradigm and clearly point to a possible pronephric contribution to the gonad in medaka.

Consequently, the importance of a pro/mesonephric field contribution to the gonads has now to be reconsidered in an evolutionary perspective amongst the whole vertebrate clade.