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Hox in frogs: xenopus reveals novel functions for vertebrate Hox genes

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Stellingen

- 1- *Hoxc6* is necessary for primary neuron formation in *Xenopus* (this thesis).
- 2- Labial *Hox* genes are required to globally pattern the hindbrain in *Xenopus laevis* (this thesis).
- 3- *Hoxc6* is required for trunk segmentation in *Xenopus laevis* (this thesis).
- 4- *Hox* gene expression in the non organizer mesoderm is an integral component of the vertical signal required for *Hox* gene expression in the overlying neurectoderm (this thesis).
- 5- The specificity of HOX proteins relies on co-factors and accessory factors that constrain their activities (Foronda *et al.*, 2008; Laurent *et al.*, 2008): FoxP1 plays a critical role in determining the motor neurons pools determined by HOX proteins within the spinal cord (Dasen *et al.*, 2008).
- 6- The extreme conservation of neck size and forelimb positioning within animal groups (eg amphibians, mammals) could result from a developmental constraint imposed by spinal cord *Hox* expression which is required for the correct positioning of limb related motoneuron circuits (Dasen *et al.*, 2008; Cohn and Tickle, 1999; McIntyre *et al.*, 2006).
- 7- The classical view that HOX proteins only provide segment identity has been challenged by vertebrate work favouring a role of *Hox* genes in the segmentation process itself in mouse (Zákány *et al.*, 2001) and *Xenopus laevis* (Peres *et al.*, 2006)
- 8- The *Hox* family transcription factors act in a sophisticated cross-regulatory network to specify individual subtypes of neurons within the nervous system (Dasen *et al.*, 2003, 2005, 2008).
- 9- It is very difficult to accept that in a “global world” some people are still dying from hunger while others are dying because of “too much” food.
- 10- Cultural relativism (assuming similar cultural values and communication habits for different cultures) is one of the main problems for harmonious globalization.
- 11- The publicly release of the full names of serious criminals, as often advocated by populist politicians, will do serious harm to people coincidentally sharing the same name.
- 12- It is unexplainable that the Gouda cheese and tulips have proven excellent Dutch products for export while the stroopwafels failed to do so!

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