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A time-space translation mechanism for patterning the vertebrate anteroposterior axis

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Stellingen

Behorende bij het proefschrift

A Time-space Translation Mechanism for Patterning the Vertebrate Anteroposterior Axis

1. Three types of Hox interactions --- posterior induction, posterior dominance and autoregulation --- play an important role in regulating Hox collinearity (This thesis).
2. Hox temporal collinearity is required for spatial collinearity (Wacker et al., 2004; This thesis).
3. In *Xenopus*, Hoxc6 plays a vital role in head-tail patterning (This thesis).
4. A timing mechanism, which is BMP dependent and can be converted into spatial patterns by anti-BMP signals, is involved in patterning the whole vertebrate A-P axis (This thesis).
5. Brachyury and SMAD signaling work collaboratively to regulate the expression of a variety of mesoderm genes, including Hox genes, which may explain the conserved pattern of Hox gene activation in the high BMP region of the mesoderm in many species. (Faial et al., 2015)
6. The dominant effect of posterior Hox genes over anterior ones are thought to mainly occur at the functional level via Hox proteins and cofactors; however, it could actually occur at different levels: transcriptional, post-transcriptional, and translational levels. (Hafen et al., 1984; Miller et al., 2001; Plaza et al., 2008; Struhl and White, 1985; Yekta et al., 2004)
7. The discrepancies between the outcomes of gene knockdown by anti-sense and knockout by genetic deletion are frequently attributed to off-target effects of the anti-sense reagents (e.g. morpholinos). However, they could also be due to more fundamental reasons like genetic compensation. (Rossi et al, 2015)

8. Timing is the key to understanding head-tail patterning.
9. More often than not, having different opinions on a scientific question does good, rather than harm, to its eventual solution. Unfortunately, not many people are aware of this.
10. Looking at what's happening in the world now, it is quite evident that a society can easily go into troubles if intellectualism is not respected.
11. The Chinese name of "Holland" (荷兰) literally means *Lotus-Orchid*. What's funny is that the country has successfully avoided being famous for both flowers.