

Expression of Toll-like receptors 4 and 7 in the embryonic and adult pancreas, liver and adrenal gland of the mouse

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The role of Toll protein in development and immunity is very well understood in *Drosophila melanogaster* (Anderson et al., 1985). Conversely, the contribution of Toll-like receptors (TLRs) in mammalian development is just beginning to be revealed.

In this study, we evaluated the expression of TLR4 and TLR7 by immunohistochemistry on paraffin-embedded tissue in the adrenal gland, liver and pancreas of mouse embryos from stages E12, E14 and E16 and in the adult organs.

Results show that TLR4 and TLR7 start to be detectable during embryonic development already at the first stage examined (E12). This expression follows the maturation of the organs and is still present in the adult with a different distribution pattern. Before this study no data in the literature were present on TLR4 and 7 expression in mammalian splanchnic organs development and in the adult no localization studies were available for TLR7.

A possible interpretation of the results suggests that, besides their immunitary function, TLRs might be involved in a shared mechanism that regulates proliferation and differentiation both in embryonic organs and adult organs (Sato et al., 2009). These results also suggest that the contribution of TLRs in the context of carcinogenesis should be investigated not only in relation to chronic inflammation and tissue damage but also in relation to their contribution to the process of organogenesis.

References

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- Sato et al. (2009) Cancer Cells Expressing Toll-like Receptors and the Tumor Microenvironment. *Cancer Microenviron* 2 Suppl 1:205-214.

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