

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/19817> holds various files of this Leiden University dissertation.

Author: Shi, Song Ting

Title: BMP signaling in skeletal muscle and bone

Date: 2012-09-18

Statements

- 1 Mutated ALK2 from FOP patients can directly convert mature endothelial cells into multi-potent mesenchymal cells, and sensitize mesenchymal cells to BMP induced osteoblast differentiation, thus making ALK2 a putative therapeutic target to prevent heterotopic ossifications in the FOP patients (this thesis).
- 2 BMP signaling is necessary for induction of osteoblast differentiation in mouse embryonic endothelial cells. TGF β signaling can potentiate BMP-induced osteoblast differentiation in endothelial cells (this thesis).
- 3 Id3 mediates Wnt induced proliferation and osteoblast differentiation of C2C12 cells (this thesis).
- 4 Anti-BMP treatment in the diseases should be considered with care to prevent the possible on-target side-effects. Dose dependent effects of such treatments should be determined in animal models (this thesis).
- 5 There are three requirements for bone induction in soft tissues: 1) an inducing agent; 2) an osteogenic precursor cell; and 3) an environment which is permissive to osteogenesis. (Chalmers J. et al; J Bone Joint Surg Br. 1975)
- 6 A disbalance in BMP signalling contributes to reduced regenerative potential of DMD muscles (Sterrenburg E. et al; Neurobiol Dis. 2006, this thesis).
- 7 BMP signalling permits population expansion by preventing premature myogenic differentiation in muscle satellite cells. (Ono Y. et al; Cell Death Differ, 2011).
- 8 Noggin stimulates while BMP2/4 represses recruitment of mesoderm progenitors from the dorso aorta to a skeletal myogenic fate. Repression of BMP signaling by Noggin improved the muscle histology in Mdx mice, a mouse model for the muscle degeneration disease DMD (Ugarte G, et al; Dev Biol. 2012, this thesis).
- 9 Two things fill the mind with ever-increasing wonder and awe, the more often and the more intensely the mind of thought is drawn to them: the starry heavens above me and the moral law within me (Immanuel Kant).
- 10 What you do not wish for yourself, do not do to others (Confucius).