

Janina Zippel, Summary

Polysaccharides from *Ribes nigrum* L., *Jatropha curcas* L. and *Mimosa tenuiflora* (Willd.) Poir.: Isolation, characterisation and investigation on cell physiology of human keratinocytes and fibroblasts

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Plant Polysaccharides are known to influence the physiology of human skin cells. There is, however, few information about the principles and active chemical structures.

This thesis focusses on the isolation, characterisation and the active principles of polysaccharides from the traditionally used medicinal plants *Ribes nigrum* L., *Jatropha curcas* L. and *Mimosa tenuiflora* (Willd.) Poir.

Isolated arabinogalactans had a strong impact on vitality and proliferation of primary fibroblasts and HaCaT-keratinocytes. A chemical and enzymatical modification altered the activity of these polysaccharide structures. Further, compounds of *J. curcas* seed endosperm induced the differentiation of primary human keratinocytes and enhanced the geneexpression and release of growth factors from bioengineered human skin equivalents. For the first time, an uptake into fibroblast cells was shown for a high molecular weight polysaccharide from *R. nigrum* via confocal laserscanning microscopy.