

## **Abstract EFAS/DGA 2007**

### **The potential of growth factors for regeneration of the auditory system**

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The auditory system requires growth factors like neurotrophic factors to develop, maintain and potentially restore structural cellular integrity as well as functionality of a system. BDNF and GDNF were demonstrated by our group as an important growth factor to induce survival and regrowth of cultured auditory neurons. In addition supporting physiological conditions as electrical stimulation or application of other factors like erythropoietin or dexamethasone were examined in order to determine additional neurotrophic/outgrowth effects on spiral ganglion cells of the cochlear. In addition in-vivo experiments were performed to determine the combined effect of electrical stimulation plus neurotrophic factor application for structural and physiological integrity of the acoustic nerve/spiral ganglion cells. Here data indicate that the combined effect of electrical stimulation plus neurotrophic factor application is more beneficial than either of the interventions by itself.

The presented data will discuss present concepts of growth factor related regeneration of the auditory system as part of regenerative strategies to develop future inner ear therapies.

