

## Publication

Agrin orchestrates synaptic differentiation at the vertebrate neuromuscular junction

## JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 155386

Author(s) Ruegg, M. A.; Bixby, J. L.

Author(s) at UniBasel Rüegg, Markus A.;

Year 1998

**Title** Agrin orchestrates synaptic differentiation at the vertebrate neuromuscular junction **Journal** Trends in Neurosciences

Volume 21

Number 1

## Pages / Article-Number 22-7

**Keywords** Agrin/metabolism/\*physiology; Animals; Cell Differentiation/\*physiology; Humans; Neuromuscular Junction/metabolism/\*physiology; Neurons/\*physiology; Synapses/metabolism/\*physiology **Mesh terms** Agrin, physiology; Animals; Cell Differentiation, physiology; Humans; Neuromuscular Junction, physiology; Neurons, physiology; Synapses, physiology

The synapse is a key structure that is involved in perception, learning and memory. Understanding the sequence of steps that is involved in establishing synapses during development might also help to understand mechanisms that cause changes in synapses during learning and memory. For practical reasons, most of our current knowledge of synapse development is derived from studies of the vertebrate neuromuscular junction (NMJ). Several lines of evidence strongly suggest that motor axons release the molecule agrin to induce the formation of the postsynaptic apparatus in muscle fibers. Recent advances implicate proteins such as dystroglycan, MuSK, and rapsyn in the transduction of agrin signals. Recently, additional functions of agrin have been discovered, including the upregulation of gene transcription in myonuclei and the control of presynaptic differentiation. Agrin therefore appears to play a unique role in controlling synaptic differentiation on both sides of the NMJ.

Publisher Elsevier

ISSN/ISBN 0166-2236 ; 1878-108X

edoc-URL http://edoc.unibas.ch/dok/A5258420

Full Text on edoc Restricted;

Digital Object Identifier DOI 10.1016/S0166-2236(97)01154-5

PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/9464682

ISI-Number WOS:000071305400009

Document type (ISI) Journal Article, Review