Title
Studies on neurotrophic and substrate — attached neurite outgrowth factors

Permalink
https://escholarship.org/uc/item/8gf669q1

Journal
International Journal of Developmental Neuroscience, 1(3)

ISSN
0736-5748

Authors
Reichardt, LF
Calof, AL
Gorin, PD
et al.

Publication Date
1983

DOI
10.1016/0736-5748(83)90235-6

Copyright Information
This work is made available under the terms of a Creative Commons Attribution License, available at https://creativecommons.org/licenses/by/4.0/

Peer reviewed
STUDIES ON NEUROTROPIC AND SUBSTRATE-ATTACHED NEURITE OUTGROWTH FACTORS
Reichardt, L.F., Calof, A.L., Gorin, P.D., Greenspan, R.J., Greif, K.F., Lander, A.D.
Matthew, W.D., Shelton, D.L., Tomaselli, K., & Winter, J. Dept. Physiology, UCSF,
San Francisco, CA 94143

Neurons require appropriate substrata on which to extend neurites and the
composition of the substrata encountered in vivo is believed to regulate both the
extent and direction of axon growth as well as the position at which synaptic
specializations appear. In particular, three constituents of extracellular
matrix—fibronectin, laminin, and factors associated with heparan sulfate proteo-
glycans—have dramatic effects on neurite outgrowth in appropriate circumstances.
Several of these factors have been shown to exist in appropriate positions to
promote neurite growth in vivo as well as in vitro. The response of neurons to
such factors depends on their growth state. This presentation will focus on
characterization of these neurite outgrowth promoting factors and our efforts to
determine their roles in directing neuronal development. The role of ECM compo-
nents in directing axon growth and guidance in vivo is poorly understood. The
study of soluble factors, which contain ECM components and act when bound to a
substratum, may offer insights into that role. Supported by grants from the NIH,
NSF, March of Dimes, and MDA.