

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME		POSITION TITLE	
Sealock, Robert		Professor of Cell & Molecular Physiology	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Iowa State University	B.S.	1962-1966	Biochemistry
Purdue University	Ph.D.	1966-1972	Biochemistry
Purdue University		1972	Biochemistry
Pasteur Institute, Paris, France		1972-1975	Neurobiology
Harvard University		1975	Neurobiology

A. Positions and Honors**Positions and employment**

1975-1984 Assistant professor of physiology, UNC
1984-1991 Associate professor of physiology, UNC
1991- Full professor, UNC

Other experience and professional memberships

1986-1987 Visiting professor, Institut Jacques Monod, University Paris VII, France
1984-1989 Member, NIH Neurological Sciences II Study Section
1991 Ad hoc reviewer, NIH Neurological Sciences Program Project study Section A
1993 Ad hoc reviewer, NIH Neurological Sciences II Study Section
Member, American Association for the Advancement of Science, American Society for Cell Biology

Honors

1973-1975 NIH Postdoctoral Fellowship
1972-1973 NATO Postdoctoral Fellowship in Science

B. Selected peer-reviewed publications (in chronological order)

1. Froehner, S. C., A. A. Murnane, M. Tobler, H. B. Peng, and R. Sealock. 1987. A postsynaptic Mr 58,000 (58K) protein concentrated at acetylcholine receptor-rich sites in Torpedo electroplaques and skeletal muscle. *Journal of Cell Biology* 104:1633-1646.
2. Sealock, R., A. A. Murnane, D. Pauline, and S. C. Froehner. 1989. Immunochemical identification of desmin in Torpedo postsynaptic membranes and at the rat neuromuscular junction. *Synapse* 3:315-324.
3. Kramarcy, N. R., and R. Sealock. 1990. Dystrophin as a focal adhesion protein: Colocalization with talin and the Mr 48,000 sarcolemmal protein in cultured Xenopus muscle. *FEBS Letters* 274:171-174.
4. Turner, C. E., N. R. Kramarcy, R. Sealock, and K. Burrige. 1991. Localization of paxillin, a focal adhesion protein, to smooth muscle dense plaques and the myotendinous and neuromuscular junctions of skeletal muscle. *Experimental Cell Research* 192:651-655.
5. Sealock, R., M. H. Butler, N. R. Kramarcy, K.-X. Gao, A. A. Murnane, K. Douville, and S. C. Froehner. 1991. Localization of dystrophin relative to acetylcholine receptor clusters in electric tissue and adult and cultured skeletal muscle. *Journal of Cell Biology* 113:1133-1144.

□ Principal Investigator/Program Director (Last, first, middle):

6. Butler, M. H., K. Douville, A. A. Murnane, N. R. Kramarcy, J. B. Cohen, R. Sealock, and S. C. Froehner. 1992. Association of the Mr 58,000 postsynaptic protein of electric tissue with Torpedo dystrophin and the Mr 87,000 postsynaptic protein. *Journal of Biological Chemistry* 267:6213-6218.
7. Hamilton, E. H., R. Sealock, N. R. Wallace, and E. J. O'Keefe. 1992. Trichohyalin: Purification from porcine tongue epithelium and characterization of the native protein. *Journal of Investigative Dermatology* 98:881-889.
8. Lai, A., Q.-Y. Liu, L. Xu, A. El-Hashem, N. R. Kramarcy, R. Sealock, and G. Meissner. 1992. Amphibian ryanodine receptor isoforms are related to those of mammalian skeletal or cardiac muscle. *American Journal of Physiology* 263:C365-C372.
9. Seok, J.-H., L. Xu, N. R. Kramarcy, R. Sealock, and G. Meissner. 1992. The 30S lobster skeletal muscle Ca²⁺ release channel (ryanodine receptor) has functional properties distinct from the mammalian channel proteins. *Journal of Biological Chemistry* 267:15893-15901.
10. Kramarcy, N. R., A. Vidal, S. C. Froehner, and R. Sealock. 1994. Association of utrophin and multiple dystrophin short forms with the mammalian Mr 58,000 dystrophin-associated protein (syntrophin). *Journal of Biological Chemistry* 269:2870-2876.
11. Peters, M. F., N. R. Kramarcy, R. Sealock, and S. C. Froehner. 1994. β 2-Syntrophin: Localization at the neuromuscular junction in skeletal muscle. *Neuroreport* 5:1577-1580.
12. Gee, S. H., R. Madhavan, S. R. Levinson, J. H. Caldwell, R. Sealock, and S. C. Froehner. 1998. Interaction of muscle and brain sodium channels with multiple members of the syntrophin family of dystrophin-associated proteins. *Journal of Neuroscience* 18:128-137.
13. Lin, J. W., M. Wyszynski, R. Madhavan, R. Sealock, J. U. Kim, and M. Sheng. 1998. Yotiao, a novel protein of neuromuscular junction and brain that interacts with specific splice variants of NMDA receptor subunit NR1. *Journal of Neuroscience* 18:2017-2027.
14. Peters, M. F., H. M. Sadoulet-Puccio, R. M. Grady, N. R. Kramarcy, L. M. Kunkel, J. R. Sanes, R. Sealock, and S. C. Froehner. 1998. Differential membrane localization and intermolecular associations of α -dystrobrevin isoforms in skeletal muscle. *Journal of Cell Biology* 142:1269-1278.
15. Kramarcy, N. R., and R. Sealock. 2000. Syntrophin isoforms at the neuromuscular junction: Developmental time course and differential localization. *Molecular and Cellular Neuroscience* 15:262-274.
16. Adams, M. E., N. R. Kramarcy, S. P. Krall, S. Rossi, R. L. Rotundo, R. Sealock, and S. C. Froehner. 2000. Absence of α -syntrophin leads to structurally aberrant neuromuscular synapses deficient in utrophin. *Journal of Cell Biology* 150:1385-1397.
17. Jenkins, S. M., K. Kizhatil, N. R. Kramarcy, A. Sen, R. Sealock, and V. Bennett. 2001. FIGQY phosphorylation defines discrete populations of L1 cell adhesion molecules at sites of cell-cell contact and in migrating neurons. *Journal of Cell Science* 114: 3823-3835.

C. Research Support

Ongoing research support

No number Sealock (PI) 01/01/00-12/31/02

Muscular Dystrophy Association

Neuromuscular junctions defects in the alpha-syntrophin knockout mouse

This is a project to define and characterize the deficits observed in the neuromuscular junctions in the alpha- and beta2-syntrophin knockout mice, and in the corresponding double knockout mouse

Role: PI

Completed Research Support

5-R01-NS33145-04 S. C. Froehner (PI)

NIH-NINDS

Function of the syntrophin/dystrophin interaction

A project to define the roles of the syntrophins and their interaction with dystrophin in skeletal muscle physiology

Role: Co-PI