



DOE Biosciences Review Panel, 2000; 2012; BES Early Career Review 2009  
 Editorial Board, , 2003-2007  
 Ad hoc member, N.I.H. Protein Structure Initiative special emphasis panel, 2005  
 Member of Biomembranes (BBM) Study Section, 2005-2009 (Chair 2007-2009  
 Editorial Board, , 2009-2017  
 Co-Chair of the 2010 ASBMB Annual Meeting in Anaheim  
 Co-Chair of the 2015 ASBMB Annual Meeting in Boston  
 AAAS Chair of General Medical Sciences, 2020; Interim Chair 3/1/2022=12/31/2022  
 AAAS Kavli journalism award reviewer, 2020, 2021  
 Member of working group for AIMBE diversity summit “Equity and Anti-Racism: A Roadmap  
 to Policy Transformation in BME” 01/28-29/2021 (<https://aimbe.org/diversity-summit/>)

256. Roberts, M.F., and Hedstrom, L. (2022) High resolution <sup>31</sup>P field cycling NMR reveals unsuspected features of enzyme-substrate-cofactor dynamics. , under review.
255. Moutoussamy, E.E., Khan, H.M., Roberts, M.F., Gershenson, A., Chipot, C., and Reuter, N. (2022) Standard binding free energy and membrane desorption mechanism for a phospholipase C. , under review.
254. Roberts, M.F., Cai, J., Natarajan, S.V., Khan, M.K., Reuter, N., Gershenson, A., and Redfield, A.G. (2021) Phospholipids in motion: High resolution <sup>31</sup>P NMR field cycling studies. , 8827-8838.
253. Rosenberg, M.M., Yao, T., Patton, Redfield, A.G., Roberts, M.F., and Hedstrom, L. (2020) Enzyme-substrate-cofactor dynamical networks revealed by high-resolution field cycling relaxometry. , 2359-2379.
252. Waheed, Q., Khan, H.M., He, T., Roberts, M.F., Gershenson, A., and Reuter, N. (2019) Interfacial aromatics mediating cation-! at dynamicaobe BT 46 0 0 46 (obe BT83)21.7 (8.) ϕ ( ) -54.3 (H) 4.6 (e) 9.2 ( -10.9(

246. Rosenberg, M.M., Redfield, A.G., Roberts, M.F., and Hedstrom, L. (2016) Substrate and cofactor dynamics on guanosine monophosphate reductase probed by high resolution field cycling  $^{31}\text{P}$  NMR relaxometry. *PLoS ONE*, 11(12), 22988-22998.
245. Huang, Q., Gershenson, A., and Roberts, M.F. (2016) Recombinant broad-range phospholipase C from *Staphylococcus aureus* exhibits optimal activity at acidic pH. *PLoS ONE*, 11(7), 697-705.
244. Khan, H.M., He, T., Fuglebakk, E., Grauffel, C., Yang, B., Roberts, M.F., Gershenson, A., and Reuter, N. (2016) A role for weak electrostatic interactions in peripheral membrane protein binding. *PLoS ONE*, 11(12), 1367-1378.
243. He, T., Gershenson, A., Eyles, S.J., Lee, Y.-J., Liu, W. R., Wang, J., Gao, J., and Roberts, M. F. (2015) Fluorinated aromatic amino acids distinguish cation- $\pi$  interactions from membrane insertion. *PLoS ONE*, 10(12), 19334-19342.
242. Mitchell, G., Ge, L., Huang, Q., Chen, C., Kianian, S., Roberts, M.F., Schekman, R., and Portnoy, D.A. (2015) Avoidance of autophagy mediated by PlcA or ActA is required for growth in macrophages. *PLoS ONE*, 10(12), 2175-2184.
241. Wei, Y., Stec, B., Redfield, A.G., Weerapana, E., and Roberts, M.F. (2015) Phospholipid binding sites of PTEN: Exploring the mechanism of PIP<sub>2</sub> activation. *PLoS ONE*, 10(12), 1592-1606.
240. Yang, B., Pu, M., Khan, H., Friedman, L., Reuter, N., Roberts, M.F., and Gershenson, A. (2015) Quantifying transient interactions between phosphatidylinositol-specific phospholipase C and phosphatidylcholine-rich vesicles. *J Biol Chem*, 290(1), 14-17.
239. Meidenbauer, J.J., and Roberts, M.F. (2014) Reduced glucose utilization underlies seizure protection with dietary therapy in epileptic EL mice. *PLoS ONE*, 9(1), 48-54.
238. Gradziel, C.S., Wang, Y., Stec, B., Redfield, A.G., and Roberts, M.F. (2014) Cytotoxic amphiphiles and phosphoinositides bind to two discrete sites on the Akt1 PH domain. *PLoS ONE*, 9(4), 462-472.
237. Cai, J., Guo, S., Lomasney, J.W., and Roberts, M.F. (2013) Ca<sup>2+</sup>-independent binding of anionic phospholipids by phospholipase C 1 EF-hand domain. *PLoS ONE*, 8(12), 37277-37288.
236. Kurnasov,

231. Goldstein, R., Cheng, J., Stec, B., and Roberts, M.F. (2012) An intramolecular  $\text{Ca}^{2+}$ -cation latch controls substrate access in the phosphatidylinositol-specific phospholipase C from *Dictyostelium discoideum*. *J Biol Chem* 287:2579-2587.
230. Haynie, S.L., Hinkle, A.S., Jones, N.L., Martin, C.A., Olsiewski, P.J., and Roberts, M.F. (2011) Reflections on the journey: Six short stories. *J Biol Chem* 286:153X-5-69. doi: 10.1186/1752-153X-5-69.
229. Neelon, K., Roberts, M.F.,

217. Chen,

202. Roberts, M.F. (2006) Characterization of organic compatible solutes of halotolerant and halophilic organisms. , 615-647.
201. Neelon, K., Schreier, H.J., Meekins, H., Robinson, P.M., and Roberts, M.F. (2005) Compatible solute effects on thermostability of glutamine synthetase and aspartate tanscarbamylase from . , 164-73.
200. Roberts, M.F. (2005) Organic compatible solutes of halotolerant and halophilic microorganisms. : 5.
199. Kobayashi, M., Gryczynski, Z., Malick, J.,

186. Roberts, M.F., Cui, Q., Turner, C.J., Case, D.A., and Redfield, A.G. (2004) High resolution field-cycling NMR studies of a DNA octamer as a probe of phosphodiester dynamics, and comparison with computer simulation. *J. Am. Chem. Soc.*, **126**, 3637-3650.
185. Feng, J.,

170. Johnson, K.A., Chen, L., Yang, H., Roberts, M.F., and Stec, B. (2001) Crystal structure and catalytic mechanism of the MJ0109 gene product – a bifunctional enzyme with inositol monophosphatase and fructose 1,6 bisphosphatase activities. *J. Biol. Chem.*, 276, 618-630.
169. Martin, D.D., Ciulla, R.A., Robinson, P.M., and Roberts, M.F. (2000) Switching osmolyte strategies: response of *Halobacterium salinarum* to changes in external NaCl. *J. Biol. Chem.*, 275, 1-10.

168







122. Roberts, M.F. (1994) First thoughts on lipid second messengers. , 219-223.
121. Ciulla, R., Clougherty, C., Belay, N., Krishnan, S., Zhou, C., Byrd, D., and Roberts, M.F. (1994) Halotolerance of strains %& and Marburg. , 3177-

105. Roberts, M.F., Lai, M.-C., and Gunsalus, R.P. (1992) Biosynthetic pathways of the osmolytes N<sup>(</sup>-acetyl-<sup>-</sup>lysine, <sup>-</sup>glutamine, and betaine in strain FDF1 suggested by nuclear magnetic resonance analyses. , 6688-6693.

88. Roberts, M.F., Choi, B.S., Robertson, D., and Lesage, S. (1990) Free amino acid turnover in methanogens measured by <sup>15</sup>N NMR spectroscopy. *Journal of Bacteriology*, 172, 18207-18212.
87. Lewis, K.A., Bian, J., Sweeney, A., and Roberts, M.F. (1990) Asymmetric short-chain phosphatidylcholines: Defining chain binding constraints in phospholipases. *Journal of Bacteriology*, 172, 9962-9970.
86. Lin, T.-L., Tseng, M.-Y., Chen,

72. Tolman, C.J., Kanodia, S., and Roberts, M.F. (1987)  $^{31}\text{P}$  and  $^{13}\text{C}$  NMR analyses of the energy metabolism of the thermophilic anaerobe *Thermotoga maritima*. *J. Biol. Chem.*, 11088-11096.
71. Choi, B.S., and Roberts, M.F. (1987)  $^{15}\text{N}$  NMR studies of *Thermotoga maritima*: Comparison of different nitrogen sources. *J. Biol. Chem.*, 259-265.
70. Levitt, M.H., and Roberts, M.F. (1987) Solvent signal suppression without phase distortion in high-resolution NMR. *J. Magn. Reson.*, 576-580.
69. Gabriel, N.E., Agman, N.V., and Roberts, M.F. (1987) Enzymatic hydrolysis of short-chain lecithin / long-chain phospholipid unilamellar vesicles: Sensitivity of phospholipases to matrix phase state. *J. Biol. Chem.*, 7409-7418.
68. Gabriel, N.E., and Roberts, M.F. (1987) Short-chain lecithin / long-chain phospholipid unilamellar vesicles: asymmetry, dynamics, and enzymatic hydrolysis of the short-chain component. *J. Biol. Chem.*, 2432-2440.
67. Lin, T.-L., Chen, S.-H., and Roberts, M.F. (1987) Thermodynamic analyses of the growth and structure of asymmetric linear short-chain lecithin micelles based on small angle neutron scattering data. *J. Biol. Chem.*, 2321-2328.
66. Lin, T.-L., Chen, S.-H., Gabriel, N.E., and Roberts, M.F. (1987) Small angle neutron scattering techniques applied to the study of polydispersed rodlike diheptanoyl-phosphatidylcholine micelles. *J. Biol. Chem.*, 406-413.
65. Evans, J.N.S., Raleigh, D.P., Tolman, C.J., and Roberts, M.F. (1986)  $^{13}\text{C}$  NMR spectroscopy of *Thermotoga maritima*. Carbon fluxes and primary metabolic pathways. *J. Biol. Chem.*, 16323-16331.
64. Suresh, N., Roberts, M.F., Coccia, M., Chikarmane, H.M., and Halvorson, H.O. (1986) Cadmium-induced loss of surface polyphosphate in *Thermotoga maritima*. *J. Biol. Chem.*, 91-94.
63. Lin, T.-L., Chen, S.-H., Gabriel, N.E., and Roberts, M.F. (1986) Use of small angle neutron scattering to determine the structure and interaction of dihexanoylphosphatidylcholine micelles. *J. Biol. Chem.*, 3499-3507.
62. Gabriel, N.E., and Roberts, M.F. (1986) Interaction of short-

57. DeBose, C.D., Burns, R.A., and Roberts, M.F. (1986) Micellar systems for defining the active site of phospholipase A<sub>2</sub>: Methyl branching in short-chain lecithins. In \_\_\_\_\_, (Eds: K.L.Mittal and P. Bothorel) Plenum Press, New York, 917-929.
56. Stark, R.E., Gosselin, G.J., and Roberts, M.F. (1986) NMR and QLS Sstudies of bile salt-lecithin mixtures," in \_\_\_\_\_ (K.L.Mittal and P. Bothorel, Eds.), Plenum (Springer) pp. 807-816.
55. Evans, J.N.S., Tolman, C.J., Kanodia, S., and Roberts, M.F. (1985) 2,3-Cyclopyrophosphoglycerate in methanogens: Evidence by <sup>13</sup>C NMR spectroscopy for a role in carbohydrate metabolism. \_\_\_\_\_, 5693-5698.
54. Moore, R.R., Burt, C.T., and Roberts, M.F. (1985) Observation of tyrosine- -phosphate in r larvae by <sup>31</sup>





26. Burns, R.A., and Roberts, M.F. (1982) Using short-chain lecithins to study the surface behavior of lipolytic enzymes. *J. Biol. Chem.*, 257, 105-106.
25. Burns, R.A., Roberts, M.F., Dluhy, R., and Mendelsohn, R. (1982) Monomer-to-micelle transition of dihexanoyl phosphatidylcholine:  $^{13}\text{C}$  NMR and Raman studies. *J. Biol. Chem.*, 257, 430-438.
24. Burns, R.A., and Roberts, M.F. (1981) Cholesterol solubilization by short-chain lecithins: characterization of mixed micelles and cholesterol activity. *J. Biol. Chem.*, 256, 7102-7108.
23. Tauber, A.I., and Roberts, M.F. (1981)  $^{31}\text{P}$  NMR spectroscopy of phorbol-myristate-acetate stimulated polymorphonuclear human leukocytes. *J. Biol. Chem.*, 256, 105-108.
22. Burns, R.A., Friedman, J.M., and Roberts, M.F. (1981) Characterization of short-chain alkyl ether lecithin analogues:  $^{13}\text{C}$  NMR and phospholipase studies. *J. Biol. Chem.*, 256, 5945-5950.
21. Burns, R.A., and Roberts, M.F. (1981) Physical characterization and lipase susceptibility of short-chain lecithin / triglyceride mixed micelles: Potential lipoprotein models. *J. Biol. Chem.*, 256, 2716-2722.
20. Roberts, M.F., Vidusek, D.A., and Bodenhausen, G. (1980) Adducts of ethylmercury phosphate with amino acids studied by indirect detection of  $^{199}\text{Hg}$  NMR. *J. Biol. Chem.*, 255, 311-314.
19. Burns, R.A., and Roberts, M.F. (1980)  $^{13}\text{C}$  NMR studies of short-chain lecithins: Motional and conformational characteristics of micellar and monomeric phospholipid. *J. Biol. Chem.*, 255, 3100-3106.
18. Dennis, E.A., Ribeiro, A.A., Roberts, M.F., and Robson, R.J. (1979) Nonionic surfactant micelles and mixed micelles with phospholipids, in *Nonionic Surfactants* (Eds: A.S. Kertes and K.L. Mittal), Plenum Publishing Corp., 175-194.
17. Adamich, M., Roberts, M.F., and Dennis, E.A. (1979) Phospholipid activation and specificity reversal of cobra phospholipase A<sub>2</sub>: II. Characterization of the phospholipid – enzyme interaction. *J. Biol. Chem.*, 254, 105-112.

11. Lewis, R.V., Roberts, M.F., Dennis, E.A., and Allison, W.S. (1977) Photoactivated hetero-bifunctional cross-linking reagents which demonstrate the aggregation state of phospholipase A<sub>2</sub>. , 5650-5654.
10. Roberts, M.F., and Dennis, E.A. (1977) Proton NMR demonstration of conformationally nonequivalent phospholipid fatty acid chains in mixed micelles. , 6142-6143.
- 9.