

## INFORMAZIONI PERSONALI

Sandro Sonnino

Data di nascita: 5 Settembre 1949, Milano, Italia.

Sede di lavoro: Dipartimento di Biotecnologie Mediche e Medicina Traslazionale,  
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[Sandro.Sonnino@unimi.it](mailto:Sandro.Sonnino@unimi.it)

Titolo accademico:

1990-, Professore Ordinario di Chimica Biologica SSD BIO10.

Ruoli accademici:

Responsabile del Dottorato di Ricerca in Scienze Biochimiche.

Responsabile del Laboratorio Radioisotopi LITA-Segrate

Precedenti posizioni accademiche:

1982-1990, Professore Associato di Chimica Biologica, Università degli Studi di Milano.

1974-1982, Assistente di Chimica Biologica, Università degli Studi di Milano.

Precedenti ruoli accademici:

Coordinatore del Laboratorio Interdisciplinare di Tecnologie Biomediche (LITA-Segrate)

Presidente della laurea triennale di Dietistica

Direttore del Dipartimento di Chimica, Biochimica e Biotecnologie Mediche.

Responsabile dell'unità di Biochimica del Centro di Eccellenza per le Malattie Neurodegenerative dell'Università degli Studi di Milano

Responsabile della Scuola di Dottorato in Scienze Biochimiche, Nutrizionali e Metaboliche dell'Università degli Studi di Milano

Responsabile del corso MD/PhD in Scienze Biomedicali

## ESPERIENZA PROFESSIONALE

La sua ricerca si è orientata, e continua, verso la comprensione delle relazioni tra la struttura e la funzione dei complessi lipidici delle membrane delle cellule neuronali e il ruolo delle membrane plasmatiche nella degenerazione neuronale e nello sviluppo tumorale. Per la ricerca ha utilizzato tessuti e cellule normali e patologici, ha isolato e studiato la struttura primaria di gangliosidi e glicosfingolipidi, le loro proprietà conformazionali, dinamiche, geometriche e aggregative, il ruolo dei gangliosidi nell'organizzazione dei domini di membrana arricchiti di sfingolipidi, i processi di interazione tra gangliosidi e proteine solubili o di membrana, il metabolismo dei gangliosidi, il ruolo dei gangliosidi nella segnalazione cellulare e il

ruolo delle glicoidrolasi della membrana plasmatica nella fisiologia cellulare modulante.

L'attività scientifica è documentata da 296 pubblicazioni, per un I.F totale oltre 1000, oltre 8000 citazioni e Hi di 53 (Scopus).

Segretario dell'organizzazione internazionale dei glicoconiugati, 2007-2017.

Rappresentante italiano nell'organizzazione internazionale dei glicoconiugati, 2007-.

Presidente eletto dell 'Organizzazione internazionale dei glicoconiugati, 2017-2019.

Membro del comitato di redazione di Neurochemical Research, di FEBS Letters, di FEBS OpenBio e di Metabolic Brain Disease

Editor-in-Chief of Glycoconjugate Journal, 2018-

E' stato membro del comitato di redazione del Journal of Neurochemistry

Guest Editor del numero speciale 17 di Glycoconjugate Journal su "Glycosphingolipids e domini di membrana".

Guest Editor del numero speciale 27 della ricerca neurochimica su "Sfingolipidi"

Membro del panel di revisione per la domanda di sovvenzione 2003 e 2006 presentata alla Deutsche Forschungsgemeinschaft per il Centro di ricerca collaborativa transregionale "Membrane Microdomains and Their Role in Human Disease".

Organizzatore del XVIII Glycoconjugate Symposium. Glycobiology dei domini della membrana lipidica: dall'organizzazione della membrana alla funzione biologica, Siena, Italia, 2005

Organizzatore della Special Neurochemistry Conference dell' ISN "Domini a membrana nella fisiologia e patologia del SNC", 22-26 maggio 2010, Erice (Trapani), Sicilia, Italia

Organizzatore dell'International Sialoglyco 2010, Postdam, Germania

Organizzatore della conferenza internazionale sulla glicobiologia del sistema nervoso: dall'era della ricerca sul genoma al glyome. 2 - 5 settembre 2017, Seoul, Corea.

Membro permanente (dal 1999) del comitato esecutivo della Conferenza internazionale sulle macromolecole delle cellule eucariotiche e (dal 1994) del comitato esecutivo della Conferenza internazionale di Sialoglicoscienza.

## ISTRUZIONE E FORMAZIONE

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Professore Ordinario di Chimica Biologica dal 1990, SSD Biochimica - BIO10  
Laurea in Chimica, 1973. Università degli Studi di Milano.

## COMPETENZE PERSONALI

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Lingua madre italiano

Altre lingue	COMPRESIONE		PARLATO		PRODUZIONE SCRITTA
	Ascolto	Lettura	Interazione	Produzione orale	
inglese	buono	ottima	buona	buona	buona

Patente di guida Categoria B

#### ULTERIORI INFORMAZIONI

##### Pubblicazioni

**309** Chiricozzi E, Maggion M, Di Biase E, Lunghi G, Fazzari M, Loberto N, Elisa M, Grassi Scalvini F, Tedeschi G and Sonnino S (2019) J.Neurochem. submitted

**308** Grassi S, Giussani P, Prioni S; Button D; Cao J; Hakimi I; Sarmiere P; Srinivas M; Cabitta L; Sonnino S; Prinetti A, (2018) Human remyelination promoting antibodies stimulates astrocytes proliferation through modulation of the sphingolipid rheostat in primary rat mixed glial cultures. Neurochem. Res under revision

**307** Sonnino S. (2018). New Horizons in Glycobiology Research FEB S Letters DOI: 10.1002/1873-3468.13300

**306** Malekkou A, Samarani M, Drousiotou A, Votsi C, Sonnino S, Pantzaris M, Chiricozzi E, Zamba-Papanicolaou E, Aureli M, Loberto N, Christodoulou K (2018) Biochemical characterization of the GBA2 c.1780G>C missense mutation in lymphoblastoid cells from patients with spastic ataxia. Int. J. Mol. Sci. 2018, 19, 3099; doi:10.3390/ijms19103099.

**305** Grassi S, Chiricozzi E, Mauri L, Sonnino S and Prinetti A. (2018) Sphingolipid and neuronal degeneration in lysosomal storage disorders. J. Neurochem DOI: 10.1111/JNC.14540

**304** Sonnino S, Chiricozzi E, Grassi S, Mauri L and Prinetti A. (2018) Gangliosides in membrane organization. Prog Mol Biol Transl Sci.156:83-120.

**303** Samarani M, Loberto N, Soldà G, Straniero L, Asselta R, Duga S, Lunghi G, Zucca FA, Mauri L, Ciampa MG, Schiumarini D, Bassi R, Giussani P, Chiricozzi E, Prinetti A, Aureli M and Sonnino S (2018) A lysosome-plasma membrane-sphingolipid axis linking lysosomal storage to cell growth arrest FASEB Journal DOI: 10.1096/fj.201701512RR

**302** Mauri L, Sonnino S and Prinetti A (2018) Chemical and

physicochemical properties of gangliosides. *Methods Mol Biol.* 2018;1804:1-17. doi: 10.1007/978-1-4939-8552-4\_1

**301** Mauri L, Ciampa MG and Sonnino S (2018) Radioactive gangliosides for biological studies. *Methods Mol Biol.* 2018;1804:311-322. doi: 10.1007/978-1-4939-8552-4\_15.

**300** Acquotti D and Sonnino S (2018) Nuclear magnetic resonance of gangliosides. *Methods Mol Biol.* 2018;1804:241-284. doi: 10.1007/978-1-4939-8552-4\_12.

**299** Murdica V, Mancini G, Loberto N, Bassi R, Giussani P, Di Muzio N, Deantoni C, Prinetti A, Aureli M and Sonnino S (2018) Abiraterone and ionizing radiation alter the sphingolipid homeostasis in prostate cancer cells. *Adv Exptl Med Biol*, in press

**298** Chiricozzi E, Mauri L, Ciampa MG, Prinetti A and Sonnino S (2018) On the use of Cholera Toxin. *Glycoconjugate Journal* 35:161-163.

**297** Chai W, Zhang Y, Mauri L, CiampaMG, Mulloy B, Sonnino S, Feizi T (2018) Assignment by negative-ion electrospray tandem mass spectrometry of the tetrasaccharide backbones of monosialylated glycans released from bovine brain gangliosides. *Journal of The American Society for Mass Spectrometry* DOI: 10.1007/s13361-018-1944

**296** Cattaneo M.G., Vanetti C., Samarani M, Aureli M., Bass R, Sonnino S., Giussani P. (2018) Crosstalk between sphingosine-1-phosphate and EGFR signalling pathways enhances human glioblastoma cell invasiveness. *FEBS Letters* 592:949-961.

**295** Sonnino S. (2018) Editorial. *Glycoconjugate Journal* 35: 1. <https://doi.org/10.1007/s10719-018-9816-9>

**294** Chiricozzi E, Pomè DY , Maggioni M, Di Biase E, Parravicini C, Palazzolo L, Loberto N, Eberini I and Sonnino S. (2017) Role of the GM1 ganglioside oligosaccharide portion in the TrkA-dependent neurite sprouting in neuroblastoma cells.. *J. Neurochem.* 143:645-659, DOI: 10.1111/jnc.14146

**293** Schiumarini D, Loberto N, Mancini G, Bassi R, Giussani P, Chiricozzi E, Samarani M, Munari S, Tamanini A, Cabrini, Lippi GG, Dehecchi MC, Sonnino S. and Aureli M (2017) Evidence for the involvement of lipid rafts and plasma membrane sphingolipid-hydrolases in *Pseudomonas aeruginosa* infection of cystic fibrosis bronchial epithelial cells. *Mediators of Inflammation*, in publication.

**292** Go S, Go S, Veillon L, Ciampa MG, Mauri L, Sato C, Kitajima K,

Prinetti A, Sonnino S, Inokuchi J-i (2017) Altered Expression of Ganglioside GM3 Molecular Species and a Potential Regulatory Role During Myoblast Differentiation. *J. Biol. Chem.* 292:7040-7051 doi:10.1074/jbc.M116.771253

**291** Sonnino S., Chiricozzi E., Ciampa M.G., Mauri L., Prinetti A., Toffano G. and Aureli M. (2017) Serum antibodies to glycan in peripheral neuropathies. *Mol. Neurobiol.* 54:1564-1567. doi: 10.1007/s12035-016-9775-8.

**290** Munari S., Loberto N., Aureli M., Vauzelleis B., Guissot N., Schiumarini D., Bassi R., Tironi M., Giri M.G., Tamanini A., Lippi G., Cabrini G., Sonnino S. and Dechecchi C (2016) Neoglycoconjugates derived from deoxynojirimycin as possible therapeutic agents for cystic fibrosis lung disease, by modulation of the sphingolipid metabolism. *JSM Genet Genomics* 3(2) 1015

**289** Aureli M, Grassi S, Sonnino S, Prinetti A. (2016) Isolation and Analysis of Detergent-Resistant Membrane Fractions. *Methods Mol Biol.* 1376:107-31. doi: 10.1007/978-1-4939-3170-5\_10.

**288** Nakayama H, Kurihara H, Morita YS, Kinoshita T, Mauri L, Prinetti A, Sonnino S, Yokoyama N, Ogawa H, Takamori K, Iwabuchi K. (2016) Lipoarabinomannan binding to lactosylceramide in lipid rafts is essential for the phagocytosis of mycobacteria by human neutrophils. *Sci Signal.* 449: ra101.

**287** Aureli M., Prinetti A., Toffano G., Carolei A., Ornello R. and Sonnino S., ((2016) Gangliosides and Guillain-Barrè Syndrome: The Facts, 20 Years after the Withdrawal of the ganglioside-Based Medications. In GBS100: Celebrating a century of progresses in Guillain-Barrè syndrome. pp. 344-348. Goodfellow J. and Willison H. eds, Published by Peripheral Nerve Society.

**286** Sonnino S, Grassi S, Prioni S, Ciampa MG, Chiricozzi E and Prinetti A (2016) lipid rafts and neurological diseases. In eLS John Wiley & Sons, Ltd: Chichester, DOI: 10.1002/9780470015902.a0023405

**285** Grassi S., Prioni S., Cabitta L., Aureli M., Sonnino S. & Prinetti A. (2016) The Role of 3-O-Sulfogalactosylceramide, Sulfatide, in the Lateral Organization of Myelin Membrane. *Neurochem Res* 41:130-143

**284** Sonnino S. and Prinetti A. (2016) Sphingolipids and neuronal plasticity. *J. Neurochem.* 137:485-8. doi: 10.1111/jnc.13589.

**283** Aureli M, Schiumarini D, Loberto N, Bassi R, Tamanini A, Mancini G, Tironi M, Munari S, Cabrini G, Dechecchi MC, Sonnino S. (2016)

Unravelling the role of sphingolipids in cystic fibrosis lung disease.  
*Chem Phys Lipids.* 200:94-103. doi:  
 10.1016/j.chemphyslip.2016.08.002

**282** Bosco, G., Diamanti, S., Meola, G., Angeard, N., Bassez, G., Ekström, A.-B., Bozzali, M., Cardani, R., Dent, G., Eymard, B., Fossati, B., Gallais, B., Gomes-Pereira, M., Gourdon, G., Kornblum, C., Lopez, A., MacKenzie, D., Minnerop, M., Pattni, J., Sergeant, N., Sonnino, S., Turner, C., Van Engelen, B., Wood, L. (2015) Workshop Report: Consensus on biomarkers of cerebral involvement in myotonic dystrophy, 2-3 December 2014, Milan, Italy . *Neuromuscular Disorders* 25, 813-823

**281** Aureli M, Grassi S, Prioni S, Sonnino S and Prinetti A (2015) Lipid membrane domains in the brain. *BBA Molecular and Cell Biology of Lipids*, 1851:1006-16 doi: 10.1016/j.bbalip.2015.02.001

**280** Aureli M, Mauri L, Ciampa MG, Prinetti A, Toffano G, Secchieri C and Sonnino S (2015) GM1 ganglioside: past studies and future potential. *Mol. Neurobiol.* 53:1824-1842 DOI: 10.1007/s12035-015-9136-z

**279** Shiozaki K, Takahashi K, Hosono M, Yamaguchi K, Hata K, Shiozaki M, Bassi R, Prinetti A, Sonnino S, Nitta K and Miyagi T (2015) Phosphatidic acid-mediated activation and translocation to the cell surface of sialidase NEU3, promoting signaling for cell migration *FASEB J.* 29:2099-111. doi:10.1096/fj.14-262543

**278** Sonnino S, Aureli M, Mauri L, Ciampa MG, Prinetti A. (2015) Membrane lipid domains in the nervous system. *Front Biosci* (Landmark Ed). 20: 280-302.

**277** Chiricozzi E, Ciampa MG, Brasile G, Compostella F, Prinetti A, Nakayama H, Ekyalongo RC, Iwabuchi K, Sonnino S, Mauri L. (2015) Direct interaction, instrumental for signaling processes, between LacCer and Lyn in the lipid rafts of neutrophil-like cells. *J Lipid Res.* 56:129-41.

**276** Aureli M, Samarani M, Murdica V, Mauri L, Loberto N, Bassi R, Prinetti A, Sonnino S. (2014) Gangliosides and cell surface ganglioside glycohydrolases in the nervous system. *Adv Neurobiol.* 9: 223-44.

**275** Aureli M, Murdica V., Loberto N., Samarani M., Prinetti A., Bassi R. and Sonnino S., (2014) Exploring the link between ceramide and ionizing radiation. *Glycoconjugate J.* 31:449–459

**274** Loberto N, Tebon M, Lampronti I, Marchetti N, Aureli M, Bassi R, Giri MG, Bezzerri V, Lovato V, Cantù C, Munari S, Cheng SH, Cavazzini A, Gambari R, Sonnino S, Cabrini G, Dehecchi MC. (2014) GBA2-Encoded  $\beta$ -Glucosidase Activity Is Involved in the Inflammatory Response to *Pseudomonas aeruginosa*. *PLoS One.* 9: e104763. doi:



10.1371/journal.pone.0104763. eCollection 2014.

**273** Schöndorf DC, Aureli M, McAllister F, Hindley C, Mayer F, Schmid B, Sardi S, Valsecchi M, Hoffmann S, Schwarz LK, Hedrich U, Berg D, Shihabuddin LS, Hu J, Pruszk J, Gygi S, Sonnino S, Gasser T, and Deleidi M (2014) iPSC-derived neurons from GBA1-associated Parkinson's disease patients show autophagic defects and impaired calcium homeostasis, *Nature Communications* 5, doi:10.1038/ncomms5028.

**272** Sonnino S, Aureli M, Grassi S, Mauri L, Prioni S, Prinetti A. Lipid Rafts in Neurodegeneration and Neuroprotection. (2014) *Mol Neurobiol.* 50, 130-148.

**271** Chiricozzi E, Niemir N, Aureli M, Magini A, Loberto N, Prinetti A, Bassi R, Polchi A, Emiliani C, Caillaud C, Sonnino S. Chaperone Therapy for GM2 Gangliosidosis: Effects of Pyrimethamine on  $\beta$ -Hexosaminidase Activity in Sandhoff Fibroblasts. (2014) *Mol Neurobiol* 50, 159-167

**270** Aureli M, Samarani M, Loberto N, Bassi R, Murdica V, Prioni S, Prinetti A, Sonnino S. (2014) The Glycosphingolipid Hydrolases in the Central Nervous System. *Mol Neurobiol.* 50. 76-87.

**269** Sonnino S, Prinetti A. (2014) Membrane domains and the "lipid raft" concept. *Curr Med Chem.* 20:4-21.

**268** Raccosta L, Fontana R, Maggioni D, Lanterna C, Villablanca EJ, Paniccia A, Musumeci A, Chiricozzi E, Trincavelli ML, Daniele S, Martini C, Gustafsson JA, Doglioni C, Feo SG, Leiva A, Ciampa MG, Mauri L, Sensi C, Prinetti A, Eberini I, Mora JR, Bordignon C, Steffensen KR, Sonnino S, Sozzani S, Traversari C, Russo V. (2013) The oxysterol-CXCR2 axis plays a key role in the recruitment of tumor-promoting neutrophils. *J Exp Med* 210:1711-28.

**267** Sonnino S., Mauri L., Ciampa M.G., Prinetti A. (2013) Gangliosides as regulators of cell signaling: ganglioside-protein interactions or ganglioside-driven membrane organization? *J Neurochem*, 124, 432-435.

**266** Santambrogio S, Ricca A, Maderna C, Ieraci A, Aureli M, Sonnino S, Kulik W, Aimar P, Bonfanti L, Martino S, Gritti A. (2012) The galactocerebrosidase enzyme contributes to maintain a functional neurogenic niche during early post-natal CNS development. *Hum Mol Genet.* 21:4732-50.

**265** Brasile G., Mauri L., Sonnino S., Compostella F., Ronchetti F. (2012) A practical route to long-chain non-natural  $\alpha,\omega$ -diamino acids. *Amino Acids*, 44, 435-441.

- 264** Valsecchi M., Mauri L., Casellato R., Ciampa M.G., Rizza L., Bonina A., Bonina F., Sonnino S. (2012) Ceramides as possible nutraceutical compounds: characterization of the ceramides of the moro blood orange (*Citrus sinensis*). *J Agr Food Chem*, 60, 10103-10110.
- 263** Rondelli V., Fragneto G., Motta S., Del Favero E., Brocca P., Sonnino S., Cantù L. (2012) Ganglioside GM1 forces the redistribution of cholesterol in a biomimetic membrane *BBA* 1818, 2860 – 2867.
- 262** Aureli M., Bassi R., Prinetti A., E. Chiricozzi, B. Pappalardi, V. Chigorno, N. Di Muzio, N. Loberto, Sonnino S. (2012) Ionizing radiations increase the activity of the cell surface glycohydrolases and the plasma membrane ceramide content. *Glycoconjugate J*, 29, 585-597.
- 261** Sonnino S., Prioni S., Chigorno V., Prinetti A. (2012) Interactions between caveolin-1 and sphingolipids, and their functional relevance *Adv Exptl Med Biol*, 749, 97-115.
- 260** Aureli M., Gritti A., Bassi R., Loberto N., Ricca A., Chigorno V., Prinetti A., Sonnino S. (2012) Plasma membrane-associated glycohydrolases along differentiation of murine neural stem cells. *Neurochem Res*, 37, 1344-1354.
- 259** Mauri L., Casellato R., Ciampa M.G., Yekusa , Casellato R., Ciampa M.G., Uekusa Y., Kato K., Kaida K-i, Motoyama M., Kusunoki S., Sonnino S. (2012) Anti-GM1/GD1a complex antibodies in GBS sera specifically recognize the hybrid dimer GM1-GD1a. *Glycobiology*, 22, 352 – 360.
- 258** Salvati E., Masserini M., Sesana S., Sonnino S. Re F., Gregori M. (2012) Liposomes Functionalized with GT1b Ganglioside with High Affinity for Amyloid - peptide. *J Alzheimers Dis*, 29 (supplement), 33-36.
- 257** Aureli M., Bassi R., Loberto N., Regis S., Prinetti A., Chigorno V., Aerts J.M., Boot R.G. Filocamo M. and Sonnino S. (2012) Cell surface associated glycohydrolases in normal and Gaucher disease fibroblasts. *J Inherit Metab Dis*, 35, 1081-1091.
- 256** Aureli M., Loberto N., Bassi R., Ferraretto A., Perego S. , Lanteri P., Chigorno V., Sonnino S., Prinetti A. (2012) Plasma membrane-associated glycohydrolases activation by extracellular acidification due to proton exchanges. *Neurochem Res*, 37, 1296-1307.
- 255** Prinetti A., Prioni S. Chiricozzi E., Schuchman E.H., Chigorno V., S. Sonnino (2011) Secondary alterations of sphingolipids metabolism



in lisosoma storage diseases. *Neurochem Res*, 36, 1654-1668.

**254** Aureli M., Loberto N., V. Chigorno, A. Prinetti, S. Sonnino (2011) Remodeling of sphingolipids by plasma membrane associated enzymes. *Neurochem Res*, 36, 1636-1644.

**253** Tancini B., Magini A., Bortot B., Polchi A., Urbanelli L., Sonnino S. Severini G.M., Emiliani C. (2011)  $\beta$ -Hexosaminidase over-expression affects lysosomal glycohydrolase espression and glycosphingolipid metabolism in mammalian cells. *Mol Cell Biochem*, 363, 109-118.

**252** Prinetti A. Cao T., Illuzzi G., Prioni S., Aureli M. Gagliano N., Tredici G., Rodriguez-Menendez V.Chigorno V., Sonnino S., (2011) A glycosphingolipid/Caveolin-1 Signaling Complex Inhibits Motility of Human Ovarian Carcinoma Cells. *J Biol Chem*, 286, 40900-40910.

**251** Cantù L., E. Del Favero, S. Sonnino, A. Prinetti (2011) Gangliosides and multiscale modulation of membrane structure. *Chem Phys Lipids*, 168, 796-810.

**250** Prinetti A., Prioni S., Loberto N., Aureli M., Nocco V., Illuzzi G., Mauri L., Valsecchi M., Chigorno V., Sonnino S. (2011) Aberrant Glycosphingolipid Expression and Membrane Organization in Tumor Cells: Consequences on Tumor-Hos Interactions *Adv Exptl Med Biol* 705, 643-667.

**249** Sonnino S., Chigorno V., Aureli M., Priscilla A. P. Masilamani. Valsecchi M., Loberto N., Prioni S., Mauri L., Prinetti A. (2011) Role of Gangliosides and Plasma Membrane-Associated Sialidase in the Process of Cell Membrane Organization *Adv Exptl Med Biol* 705, 297-316.

**247** Sonnino S., Prinetti A., Nalivaeva N.. Turner T. (2010) Membrane domains in CNS Physiology and Pathology” *J Neurochem*, 116, 669-670.

**246** Del Favero E., Brocca P., Motta S., Rondelli V., Sonnino S, Cantù L. (2011) Nanoscale structural response of ganglioside-containing aggregates to the interaction with sialidase. *J Neurochem*, 116, 833-839.

**245** Sonnino S., Prinetti A. (2010) Lipids and membrane lateral organization. *Frontiers in Membrane Physiology and Biophysics* 1, 53 1-9.

**244** Ledesma M.D., Prinetti A., Sonnino S., Schuchman E. H. (2011) Brain pathology in Niemann Pick disease type A: Insights from the acid sphingomyelinase knockout mice. *J Neurochem*, 116, 779-788.

**243** Aureli M., Loberto N., Lanteri P., V. Chigorno, Prinetti A., Sonnino S. (2010) Cell surface sphingolipid glycohydrolases in neuronal differentiation and aging in culture. *J Neurochem*, 116, 891-899.

**242** Sonnino S., Prinetti A. (2010) Gangliosides as Regulators of Cell Membrane Organization and Functions *Adv Exptl Med Biol* 688,165-184.

**241** Gobbi M., Re F., Canovi M., Beeg M., Gregori M., Sesana S., Sonnino S., Brogioli D., Musicanti C., Gasco P., Salmona M., Masseirini M.E. (2010) Lipid-based nanoparticles with high binding affinity for amyloid- $\beta_{1-42}$  peptide. *Biomaterials*, 31, 6519-6529.

**240** Sonnino S. (2010) Frontiers in membrane biochemistry. *Febs Lett*, 584, 1633.

**239** Aureli M., Prioni S., Mauri L., Loberto N., Casellato R., Ciampa MG., Chigorno V., Prinetti A., Sonnino S. (2010) Photoactivable sphingosine as a tool to study membrane microenvironments in cultured cells. *J Lipid Res*, 51, 798 – 808.

**238** Valsecchi M., Aureli M., Mauri L., Chigorno V., Prinetti A. and Sonnino S. (2010) Sphingolipidomics of A2780 human ovarian carcinoma cells treated with synthetic retinoids. *J Lipid Res*, 51, 1832 - 1840.

**237** Illuzzi G., Bernacchioni C., Aureli M., Prioni S., Donati C., Chigorno V., Bruni P., Sonnino S., and Prinetti A. (2010) Sphingosine kinase mediates resistance to the synthetic retinoid N-(4-hydroxyphenyl) retinamide in human ovarian cancer cells. *J Biol Chem*, 285,18594-18602.

**236** Sonnino S., Aureli M., Loberto N., Chigorno V. and Prinetti A. (2010) Fine tuning of cell functions through remodeling of glycosphingolipids by plasma membrane-associated glycohydrolases. *FEBS Lett*, 584, 1914-1922.

**235** Piccinini M., Scandroglio F. Prioni S., Buccinnà B., Loberto N., Aureli M., Chigorno V., Lupino E., DeMarco G., Lomartire A., Rinaudo M., Sonnino S. and Prinetti A. (2010) Deregulated sphingolipid metabolism and membrane organization in neurodegenerative disorders. *Mol Neurobiol*, 41, 314-340.

**234** Prinetti A, Aureli M, Illuzzi G, Prioni S, Nocco V, Scandroglio F, Gagliano N, Tredici G, Rodriguez-Menendez V, Chigorno V, Sonnino S. (2010) GM3 synthase overexpression results in reduced cell motility and caveolin-1 up-regulation in human ovarian carcinoma cells. *Glycobiology* 20, 62-77.

**233** Villablanca E. J., Raccosta L., Zhou D., Fontana R., Maggioni L.,

Negro A., Sanvito F., Ponzoni M., Valentinis B., Bregni M., Prinetti A., Steffensen K.R., Sonnino S., Gustafsson J-A., Doglioni C., Bordignon C., Traversari C. and Russo V. (2010) Tumor-mediated LXR- $\alpha$  activation inhibits CC chemokine receptor7 expression on dendritic cells and dampens antitumor responses. *Nat Med*, 16, 98-105.

**232** Aureli M., Masilamani A.P., Illuzzi G., Loberto N., Scandroglio F., Prinetti A., Chigorno V. and Sonnino S. (2009) Activity of plasma membrane  $\beta$ -galactosidase and  $\beta$ -glucosidase. *FEBS Lett* 583, 2469-2473.

**231** Chigorno V., Pitto M., Sonnino S., Goi G., (2009) Utilizzo dei fibroblasti in coltura nella diagnostica biochimica delle malattie di accumulo lisosomale. *BC biochimica clinica*, 33, 112-121.

**230** Martino S., Di Girolamo I., Cavazzin C., Tiribuzi R., Galli R., Rivaroli A., Valsecchi M. Sandhoff K., Sonnino S., Vescovi A., Gritti A., Orlacchio A. (2009) Neural precursor cell cultures from GM2-gangliosidosis animal models recapitulate the biochemical and molecular hallmarks of the brain pathology. *J Neurochem*, 109, 135-147.

**229** Prinetti, A., Sonnino S. (2009) Sphingolipids and membrane environments for caveolin. *FEBS Lett* 583, 597-606.

**228** Buccinà B., Piccinini M., Prinetti A., Prioni S., Scandroglio F., Valsecchi M., Votta B., Grifoni S., Lupino E., Ramondetti C., Schuchman E.H., Sonnino S., Rinaudo M.T. (2009) Alterations of myelin-specific proteins and sphingolipids characterize the brains of acid sphingomyelinase-deficient mice, an animal model of niemannpick disease type A. *J Neurochem*, 109, 105-115.

**227** Prinetti A., Loberto N., Chigorno V., Sonnino S. (2009) Glycosphingolipid behaviour in complex membranes. *BBA-Biomembranes*, 1788, 184-193.

**226** Sonnino S., Prinetti A., Nakayama H., Yangida M., Ogawa H. and Iwabuchi K. (2008) Role of very long fatty acid-containing glycosphingolipids in membrane organization and cell signaling: the model of lactosylceramide in neutrophils. *Glycoconjugate J*, 26, 615-621.

**225** Sonnino S., Prinetti A. (2008) Membrane lipid domains and membrane lipid domain preparations: are they the same thing? *Trends in Glycoscience and Glycotechnology*, 116, 315-340.

**224** Scandroglio F, Kummetha Venkata J., Loberto N., Prioni S., Schuchman E.H., Chigorno C., Prinetti A. and Sonnino S. (2008) Lipid contents of brain, of brain membrane lipid domains and of neurons from acidic sphingomyelinase deficient mice (ASMKO). *J Neurochem*,

107, 329-338.

**223** Prinetti A., Rocchetta F., Costantino E., Frattini A., Caldana E., Rucci F., Bettiga A., Poliani P.L., Chigorno V. and Sonnino S (2008) Brain lipid composition in Grey-lethal mutant mouse characterized by severe malignant osteopetrosis. *Glycoconjugate J*, 26, 623-633.

**222** Scandroglio F., Loberto N., Valsecchi M., Chigorno V., Prinetti A. and Sonnino S. (2008) Thin layer chromatography of gangliosides. *Glycoconjugate J*, 26,961-973.

**221** E.J. Villablanca, D. Zhou, B. Valentinis, A. Negro, L. Raccosta, L. Mauri, A. Prinetti, S. Sonnino, C. Bordignon, C. Traversari and V. Russo (2008) Selected natural and synthetic retinoids impair CCR7- and CXCR4-dependent cell migration *in vitro* and *in vivo*. *Journal Leukocyte Biol*, 84, 871-879.

**220** Spotlight on ...Sandro Sonnino (2008) *FEBS Lett* 582, 843.

**219** Sahores M., Prinetti A., Chiabrando G., Blasi F. and Sonnino S. and Blasi F. (2008) uPA binding increases uPAR localization to lipid rafts and modifies the receptor microdomain composition. *Biochim Biophys Acta – Biomembranes* 1778, 250-259.

**218** Nakayama H. , Yoshizaki F., Prinetti A., Sonnino S., Mauri L., Takampri K., Ogawa H., Iwabuchi K. (2008) Lyn-coupled LacCer-enriched lipid rafts are required for CD11b/CD18-mediated neutrophil phagocytosis of non-opsonized microorganisms. *J Leukocyte Biol* 83, 728-741.

**217** Iwabuchi K., Prinetti A., Sonnino S., Mauri L., Kobayashi T., Ishii K., Kaga N., Murayama K., Kurihara H., Nakayama H., Yoshizaki F., Takamori K., Ogawa H., Nagaoka. (2008) Involvement of very long fatty acid-containing lactosylceramide in lactosylceramide-mediated superoxide generation and migration in neutrophils. *Glycoconjugate J* 25, 357–374.

**216** Sonnino S., Casellato R., Chigorno V., Mauri L., Loberto N., Prinetti A., Prioni S., Valsecchi M. Glycosignaling domains in the physiology and pathophysiology of neuronal cells  
*Glycoscience 2003-2007* In commemoration of **15<sup>th</sup> anniversary** of the the Mizutani Foundation of Glycoscience.

**215** Prinetti A., Mauri L., Chigorno V. and Sonnino S. (2007) Lipid membrane Domains in Glycobiology, **Comprehensive Glycoscience**, from Chemistry to Systems Biology J. Kamerling, G.-J. Boons, Y. Lee, A. Suzuki, N. Taniguchi, A.G.J. Voragen, eds., Vol 1, pp 697-731, 2007 Elsevier.

**214** Campanero-Rhodes M.A., Smith A., Chai W., Sonnino S., Mauri L., Childs R., Zhang Y., Ewers H., Helenius H., Imberty A. and Feizi T. (2007) *N*-glycolyl GM1 ganglioside as a receptor for Simian virus 40 (SV40). *J Virol* 81, 12846-12858.

**213** Li Y.T., Li S.-C., Kiso M., Ishida H., Mauri L., Raimondi L., Bernardi A. and Sonnino S. (2008) Effect of structural modifications of ganglioside GM2 on intra-molecular carbohydrate-to-carbohydrate interaction and enzymatic susceptibility. *BBA-Gen Subjects*, 1780, 353-361.

**212** Rivaroli A., Prioni S., Loberto N., Bettiga A., Chigorno V., Prinetti A. and Sonnino S. (2007) Reorganization of prion protein membrane environment during low-potassium induced apoptosis in primary rat cerebellar neurons. *J Neurochem*, 103, 1954-1967.

**211** Prinetti A., Prioni S., Loberto N., Aureli M., Chigorno V. and Sonnino S. (2008) Regulation of tumor phenotypes by caveolin-1 and sphingolipid-controlled membrane signaling complexes. *BBA-Gen Subjects*, 1780, 585-596.

**210** Prinetti A., Chigorno V., Mauri L., Loberto N., Sonnino S. (2007) Modulation of cell functions by glycosphingolipid metabolic remodeling in the plasma membrane *J Neurochem*, 103 (suppl. 1), 113-125.

**209** Roperto S., Borzacchiello G., Casellato R., Galati P., Russo V., Sonnino S. and Roperto F. (2007) Sialic acid and GM3 ganglioside expression in some papillomavirus-associated urinary bladder tumours of cattle. *J Comp Pathol*, 137, 87-93.

**208** Perrotta C., Bizzozero L., Falcone S., Rovere-Querini P., Prinetti A., Schuchman E.H., Sonnino S, Manfredi A.A. and Clementi E. (2007) Nitric oxide boosts chemoimmunotherapy via inhibition of acid sphingomyelinase in a mouse model of melanoma. *Cancer Res*, 67, 7559-7564.

**207** Kabayama K., Sato T., Saito K., Loberto N., Prinetti A., Sonnino S., Kinjo M., Igarashi Y., Inokuchi J. (2007) Dissociation of the insulin receptor and caveolin-1 complex by ganglioside GM3 in the state of insulin resistance. *Proc Natl Acad Sci USA*, 104, 13678-13683.

**206** Valaperta R., Valsecchi M., Rocchetta F., Aureli M., Prioni S., Prinetti A., Chigorno V. and Sonnino S. (2007) Induction of axonal differentiation by silencing plasma membrane associated sialidase Neu3 in neuroblastoma cells. *J Neurochem*, 100, 708-719.

**205** Townson K., Boffey J., Nicholl D., Veitch J., Bundle D., Zhang P., Samain E., Antoine T., Bernardi A., Arosio D., Sonnino S., Isaacs N. and Willison H. (2007) Solid phase immunoadsorption for therapeutic and analytical studies on neuropathy-associated anti-GM1 antibodies. *Glycobiology*, 17, 294-303.

**204** Valsecchi M., Mauri L., Casellato R., Prioni S., Loberto N., Prinetti A., Chigorno V., and Sonnino S. (2007) Ceramide and sphingomylin species of fibroblasts and neurons in culture. *J Lipid Res*, 48, 417-424.

**203** Sonnino S. Mauri L., Chigorno V., Prinetti (2007) Gangliosides as components of lipid membrane domains. *Glycobiology*, 17, 1R-13R.

**202** Tivodar S., Paladino S., Pillich R., Prinetti A., Chigorno V., Van Meer G., Zurzolo C. and Sonnino S. (2006) Analysis of detergent resistant membranes associated with apical and basolateral GPI-anchored proteins in polarized epithelial cells. *FEBS Lett*, 580, 5705-5712.

**201** Sonnino S., Prinetti A., Mauri L., Chigorno V., Tettamanti G. (2006) Dynamic and structural properties of sphingolipids as driving force to the formation of membrane domains. *GD1a*.

**200** Valaperta R., Chigorno V., Basso L., Prinetti A., Bresciani R., Preti A., Myagi T. and Sonnino S., (2006) Plasma membrane production of ceramide from ganglioside GM3 in human fibroblasts. *FASEB J*, 20, 1227-1229.

**199** Chigorno V., Sciannamblo M., Mikulak J, Prinetti A., and Sonnino S. (2006) Efflux of sphingolipids metabolically labeled with [1-<sup>3</sup>H]sphingosine L-[3-<sup>3</sup>H]serine and [9,10-<sup>3</sup>H]palmitic acid from normal cells in culture. *Glycoconjugate J*, 23, 159-165.

**198** Ciaffoni F., Tatti M., Boe A., Salvioli R., Fluharty A., Sonnino S. and Vaccaro A.M. (2006) Saposin B binds and transfers phospholipids. *J Lipid Res*, 47, 1045-1053.

**197** Prinetti A., Millimaggi D., D'Ascenzo S., Clarkson M., Bettiga A., Chigorno V., Sonnino S., Pavan A. and Dolo V. (2006) Lack of ceramide generation and altered sphingolipid composition are associated with drug resistance in human ovarian carcinoma cells. *Biochem J* 395, 311-318.

**196** Mencarelli S., Cavalieri S., Magini A., Tancini B., Basso L., Lemansky P., Hasilik A., Li Y-T, Chigorno V., Orlacchio A., Emiliani C. and Sonnino S. (2005) Identification of plasma membrane associated mature  $\beta$ -hexosaminidase A, active towards GM2 ganglioside, in human fibroblasts. *FEBS Lett*, 579, 5501-5506.



**195** Loberto N., Prioni S., Bettiga A, Chigorno V., Prinetti A. and Sonnino S., (2005) The membrane environment of endogenous cellular prion protein in primary rat cerebellar neurons. *J Neurochem*, 95, 771-783.

**194** Arfi A., Burgoin C., Basso L., Emiliani C., Tancini B., Chigorno V., Li Y.-T., Orlacchio A., Poenaru L., Sonnino S. and Caillaud C. (2005) Bicistronic lentiviral vector  $\beta$ -hexosaminidase deficiency in transduced and cross-corrected human Sandoff fibroblasts. *Neurobiol Dis*, 20, 583-593.

**193** Chigorno V., Giannotta C., Ottico E., Sciannamblo M., Mikulak J., Prinetti A. and Sonnino S. (2005) Sphingolipid uptake by cultured cells: Complex aggregates of cell sphingolipids with serum proteins and lipoproteins are rapidly catabolized. *J Biol Chem*, 28, 2668-2675.

**192** Villani M.G., Appierto V., Cavadini E., Valsecchi E., Sonnino S., Curley R.W. and Formelli F. (2004) Identification of the fenretinide metabolite 4-oxo-fenretinide present in human plasma and formed in human ovarian carcinoma cells through induction of cytochrome P450 26A1. *Clin Cancer Res*, 10, 6265-6275.

**191** Prioni S, Mauri L, Loberto N., Casellato R, Chigorno V, Karagogeos D, Prinetti A and Sonnino S. (2004) Interactions between gangliosides and proteins in the exoplasmic leaflet of neuronal plasma membranes: a study performed with a tritium labeled GM1 derivative containing a photoactivable group linked to the oligosaccharide chain. *Glycoconjugate J*, 21, 461-470.

**190** Mauri L, Prioni S, Loberto N, Chigorno V, Prinetti A and Sonnino S. (2004) Synthesis of radioactive and photoactivable ganglioside derivatives for the study of ganglioside-protein interactions. *Glycoconjugate J*, 20, 11-23.

**189** Zucchi I., Prinetti A., Scotti M., Valsecchi V., Valaperta R., Mento E., Reinbold R., Vezzoni P., Sonnino S., Albertini A. and Dulbecco R. (2004) Association of rat8 with Fyn protein kinase via lipid rafts is required for rat mammary cell differentiation *in vitro*. *P Natl Acad Sci USA*, 101, 1880-1885.

**188** Papini N., Anastasia L., Tringali C., Croci G., Bresciani R., Yamaguchi K., Miyagi T., Preti A., Prinetti A., Prioni S., Sonnino S., Tettamanti G., Venerando B. and Monti E. (2004) The plasma membrane-associated sialidase MmNEU3 modifies the ganglioside pattern of adjacent cells supporting its involvement in cell-to-cell interactions. *J Biol Chem*, 279, 16989-16995.

**187** Li Y.-Li., Su-Chen L., Ishida H., Raimondi L., Bernardi A. and

Sonnino S. (2003) Structural basis for the enzymatic resistance of the GM2 ganglioside. *Method Enzymol*, 363, 242-264.

1. **186** Ottico E., Prinetti A., Prioni S., Giannotta C., Basso L., Chigorno V. and Sonnino S. (2003) Dynamics of membrane lipid domains in neuronal cells differentiated in culture. *J Lipid Res*, 44, 2142-2151.

**185** Mauri L., Valsecchi M., Casellato R., Li S-C., Li Y-T. and Sonnino S. (2003) Procedure for the separation of the GM2 ganglioside species with different ceramide structures by flash reversed-phase silica gel liquid chromatography. *J Chromatog B*, 796, 1-10.

**184** Sciannamblo M., Chigorno V., Passi A., Valaperta R., Zucchi I., and Sonnino S. (2003) of the ganglioside pattern and content in human fibroblasts by high density cell population subculture progression. *Glycoconjugate J*, 19, 181-186.

**183** Loberto N., Prioni S., Ottico E., Prinetti A., Karagogeos D., Chigorno V. and Sonnino S. (2003) The adhesion protein TAG-1 has a ganglioside environment in the sphingolipid enriched membrane domains of neuronal cells in culture. *J Neurochem*, 85, 224-233.

**182** Prinetti A., Basso L., Appierto V., Villani M.G., Valsecchi M., Liberto N., Prioni S., Chigorno V., Cavadini E., Formelli F., and Sonnino S. (2003) Altered sphingolipid metabolism in N-(4-hydroxyphenyl)retinamide-resistant A2780 human ovarian carcinoma cells. *J Biol Chem* 278, 5574-5583.

**181** Rizzo AM., Berra B., Rossi F., Guerra A., Gornati R., Bernardini G., Taki T., Kasama T., Mauri L. and Sonnino S. (2002) Structure of the main ganglioside from the brain of *Xenopus Laevis*. *Glycoconjugate J*, 19, 53-57.

**180** Sonnino S. (2002) Forward. Special issue on sphingolipids dedicated to Professor Guido Tettamanti. *Neurochem Res* 27, 537-538.

**179** Prioni S., Loberto N., Prinetti A., Chigorno V., Guzzi F., Maggi R., Parenti M. and Sonnino S. (2002) Sphingolipid metabolism and caveolin expression in gonadotropin-releasing hormone-expressing GN11 and gonadotropin-releasing hormone-secreting GT1-7 neuronal cells. *Neurochem Res* 27, 831-840.

**178** Bernardi A., Arosio D. and Sonnino S. (2002) Mimicking gangliosides by design: mimics of GM1 headgroup. *Neurochem Res*, 27, 539-545.

**177** Martino S., Cavalieri C., Emiliani C., Dolcetta D., Cusella De Angelis M.G., Chigorno V., Severini GM., Sandhoff K., Bordignon C., Sonnino S. and Orlacchio S. (2002) Restoration of the GM2 ganglioside metabolism in bone marrow-derived stromal cells from a Tay-Sachs disease animal model. *Neurochem Res*, 27, 793-800.

**176** Martino S., Emiliani C., Tancini B., Severini GM., Chigorno V., Bordignon C., Sonnino S., and Orlacchio S. (2002) Absence of metabolic cross-correction in Tay-Sachs cells: implications for gene therapy. *J Biol Chem*, 277, 20177-20184.

**175** Masserini M., Palestini P., Pitto M., Chigorno V. and Sonnino S. (2002) Preparation and use of liposomes for the study of sphingolipid segregation in membrane model systems. *Methods in Molecular Biology*, 199, 17-27.

**174** Rizzo A.M., Rossi F., Guerra A., Berra B., Gornati R., Bernardini G. and Sonnino S. (2001) Exogenous sphingosine enters *Xenopus laevis* embryos grown in Petri dishes and it is metabolized. *Bioscience Rep*, 21, 719-731.

**173** Masserini M., Ravasi D. and Sonnino S. (2001) Role of glycosphingolipids in formation and function of membrane microdomains. *Trends Glycosci Glyc*, 13, 239-250.

**172** Prinetti A., Prioni S., Chigorno S., Karagogeos D., Tettamanti G. and Sonnino S. (2001) Immunoseparation of sphingolipid-enriched membrane domains enriched in Src family protein tyrosine kinases and in the neuronal adhesion molecule Tag-1 by anti-GD3 ganglioside monoclonal antibody. *J Neurochem*, 78, 1162-1167.

**171** Valiente O., Mauri L., Casellato R., Fernandez L.E. and Sonnino S. (2001) Preparation of deacetyl-, lyso- and deacetyl-lyso-GM3 by selective alkaline hydrolysis of GM3 ganglioside. *J Lipid Res*, 42, 1318-324.

**170** Ono M., Handa K., Sonnino S., Withers D.A., Nagai H. and Hakomori S.-I. (2001) GM3 ganglioside inhibits CD9-facilitated haptotactic cell motility: co-expression of GM3 and CD9 is essential in down-regulation of tumor cell motility and malignancy. *Biochemistry*, 40, 6414-6421.

**169** Prinetti A., Chigorno V., Prioni S., Loberto N., Marano N., Tettamanti G. and Sonnino S. (2001) Changes in the lipid turnover, composition and organization, as sphingolipid-enriched membrane domains, in rat cerebellar granule cells developing in vitro. *J Biol Chem*, 276, 21136-21145.

**168** Brocca P., Bernardi A., Raimondi, L. and Sonnino S. (2000)

Modeling Ganglioside Headgroups by Conformational Analysis and Molecular Dynamics. *Glycoconjugate J*, 17, 289-299.

**167** Bernardi A., Carrettoni L., Grosso Ciponte A., Monti D. and Sonnino S. (2000). Second generation mimics of ganglioside GM1 as artificial receptors for cholera toxin: replacement of the sialic acid moiety. *Bioorg Med Chem Lett*, 10, 2197-2200.

**166** Sonnino S. and Tettamanti G. (2000) Glycosphingolipids and membrane domains. *Glycoconjugate J*, 17, 141-141.

**165** Prinetti A., Marano N., Prioni S., Chigorno V., Mauri L., Casellato R., Tettamanti G. and Sonnino S. (2000) Association of Src-family protein tyrosine kinases with sphingolipids in rat cerebellar granule cells differentiated in culture. *Glycoconjugate J*, 17, 223-232.

**164** Dolo V., D'Ascenzo S., Sorice M., Pavan A., Sciannamblo M., Prinetti A., Chigorno V., Tettamanti G. and Sonnino S. (2000) New approaches to the study of sphingolipid enriched membrane domains: the use of electron microscopy autoradiography to reveal metabolically tritium labeled sphingolipids in cell cultures. *Glycoconjugate J*, 17, 261-268.

**163** Acquotti D. and Sonnino S. (2000) Use of nuclear magnetic resonance spectroscopy in evaluation of ganglioside structure, conformation and dynamics. *Method Enzymol*, 312, 247-272.

**162** Shamshiev A., Donda A., Prigozy T.I., Mori L., Chigorno V., Benedict C.A., Kappos L., Sonnino S., Kronenberg M. and De Libero G. (2000) The  $\alpha\beta$  T cells response to self-glycosphingolipids shows a novel mechanism of CD1b loading and requirement for complex oligosaccharides. *Immunity*, 13, 255-264.

**161** Sonnino S. and Chigorno V. (2000) Ganglioside molecular species containing C18- and C20-sphingosine in mammalian nervous tissue and neuronal cell cultures. *BBA-Rev Biomembranes*, 1469, 63-77.

**160** Chigorno V., Palestini P., Sciannamblo M.T., Dolo V., Pavan A., Tettamanti G. and Sonnino S. (2000) Evidence that ganglioside domains are distinct from and *caveolae* in MDCK and human fibroblast cells in culture. *Eur J Biochem*, 267, 4187-4197.

**159** Prinetti A., Chigorno V., Tettamanti G. and Sonnino S. (2000) Sphingolipid-enriched membrane domains from rat cerebellar granule cells differentiated in culture: a compositional study. *J Biol Chem*, 275, 11658-1665.

**158** Zecca L., Costi P., Mecacci C., Ito S., Terreni M. and Sonnino S.

(2000) Interaction of human substantia nigra neuromelanin with lipids and peptides. *J Neurochem*, 74, 1758-1765.

**157** Sonnino S., Chigorno V. and Tettamanti G. (2000) Preparation of radioactive gangliosides, [<sup>3</sup>H] or [<sup>14</sup>C] isotopically labeled at the oligosaccharide or ceramide moieties. *Method Enzymol*, 311, 639-656.

**156** Basu M., Bradley M., Kelly P., O'Donnel P., Miguel M., Sonnino S., Banerjee S. and Basu S. (1999) Ceramide glicanase activities in human cancer cells. *Bioscience Rep*, 19, 449-460.

**155** Sonnino S., Brocca P., Acquotti D., Bernardi A., Raimondi L., Kiso M., Ishida H., Li S.-C. and Li Y.-T. (1999) The structural basis for the susceptibility of gangliosides to enzymatic degradation. *Bioscience Rep*, 19, 163-168.

**154** Mauri L., Casellato R., Kirschner G. and Sonnino S. (1999) A procedure for the preparation of GM3 ganglioside from GM1-lactone. *Glycoconjugate J*, 16, 197-203.

**153** Cantu' L., Corti M., Del Favero E., Muller E., Raudino A., Sonnino S. (1999) A calorimetric study of thermal histeresis effects in ganglioside micelles. *Progr Colloid Polym Sci*, 112, 5-10.

**152** Cantu' L., Corti M., Del Favero E., Muller E., Raudino A. and Sonnino S. (1999) Thermal hysteresis in ganglioside micelles investigated by differential scanning calorimetry and light-scattering. *Langmuir*, 15, 4975-4980.

**151** Li Y.-T., S.-C. Li, Hasegawa A., Ishida H., Kiso M., Bernardi A. Brocca, P., Raimondi L. and Sonnino S. (1999) Structural basis for the resistance of Tay-Sachs ganglioside GM2 to enzymatic degradation. *J Biol Chem*, 274, 10014-10018.

**150** Bernardi A., Checchia A., Brocca P., Sonnino S. and Zuccotto F. (1999) Sugar mimics: an artificial receptor for Cholera Toxin. *J Am Chem Soc*, 121, 2032-2036.

**149** De Maria, R., Divari S., Bo S., Sonnino S., Lotti D., Capecchio M.T. and Castagnaro, M. (1998) Beta-galactosidase deficiency in a Korat cat: a new form of feline GM1-gangliosidosis. *Acta Neuropathol*, 96, 307-314.

**148** Chigorno V., Valsecchi M. and Sonnino S. (1998) Human fibroblasts in culture metabolize differently exogenous GM3 ganglioside species containing C18-and C20-sphingosine. *Acta Biochim Pol*, 45, 385-392.

**147** Brocca P., Berthault P., and Sonnino S. (1998) Conformation of

the oligosaccharide chain of GM1 ganglioside in a carbohydrate enriched surface. *Biophys J*, 74, 309-318.

**146** Chigorno V., Negroni E., Nicolini M. and Sonnino S. (1997) Activity of 3-ketosphinganine synthase during differentiation and aging of neuronal cells in culture. *J Lipid Res*, 38, 1163-1169.

**145** Chigorno V., Riva C., Valsecchi M., Nicolini M., Brocca P. and Sonnino S. (1997) Metabolic processing of gangliosides by human fibroblasts in culture. Formation and re-cycling of separate pools of sphingosine. *Eur J Biochem*, 250, 661-669.

**144** Brocca P. and Sonnino S. (1997) Dynamic and spatial organization of surface gangliosides. *Trends Glycosci Glyc*, 9, 433-445.

**143** Chigorno V., Valsecchi M., Nicolini M. and Sonnino S. (1997) The use of isotopically radiolabeled GM3 ganglioside for the study of Salla disease. *Indian J Biochem Bio*, 34, 150-156.

**142** Sonnino S., Valsecchi M., Palestini P., Nicolini M. and Chigorno V. (1997) High Performance Liquid Chromatography separation of gangliosides, in *“Techniques in glycobiology”* (R.R. Townsend ed.), pp.127-136, Marcel Dekker inc., New York.

**141** Valsecchi M., Chigorno V., Nicolini M. and Sonnino S. (1996) Changes of free long chain base in neuronal cells during differentiation and aging in culture. *J Neurochem*, 67, 1866-1871.

**140** Ferraretto A., Sonnino S., Soria M.R. and Masserini M. (1996) Characterization of biotinylated liposomes sensitive to temperature and pH: new tools for anticancer drug delivery. *Chem Phys Lipids*, 82, 133-139.

**139** Sonnino S., Nicolini M. and Chigorno V. (1996) Preparation of radiolabeled gangliosides. *Glycobiology*, 6, 479-487.

**138** Chigorno V., Tettamanti G. and Sonnino S. (1996) Metabolic processing of gangliosides by normal and Salla cultured human fibroblasts in culture: a study performed by administering radioactive GM3 ganglioside. *J Biol Chem*, 271, 21738-21744.

**137** Wu Y.Y., Sonnino S., Li Y.T. and Li S.C. (1996) Characterization of an alternatively spliced GM2 activator protein, GM2A protein; an activator protein which stimulates the enzymatic hydrolysis of N-acetylneuraminic acid, but not N-acetylgalactosamine, from GM2. *J Biol Chem*, 271, 10611-10615.

**136** Negroni E., Chigorno V., Tettamanti G. and Sonnino S. (1996)



Evaluation of the efficiency of the assay procedure for the determination of gangliosides in human serum. *Glycoconjugate J*, 13, 347-352.

**135** Cantu' L., Corti M., Del Favero E., Digirolamo E., Sonnino S. and Tettamanti G. (1996) Experimental evidence of a temperature-related conformational change of the hydrophilic portion of gangliosides. *Chem Phys Lipids*, 79, 137-145.

**134** Valsecchi M., Palestini P., Chigorno V. and Sonnino S. (1996) Age-related changes of the ganglioside long-chain base composition in rat cerebellum. *Neurochem Int* 28, 183-187.

**133** Brocca P., Acquotti D. and Sonnino S. (1996) Nuclear Overhauser effect investigation on GM1 ganglioside containing *N*-glycolylneuraminic acid, ( $\text{II}^3\text{Neu5GcGgOse}_4\text{Cer}$ ). *Glycoconjugate J*, 13, 57-62.

**132** Masserini M., Bottiroli G., Fra A.M., Simons K., Pianetti S., Sonnino S., Pitto M., Palestini P. (1995) "Glycolipid domains and caveolae", in: "*Physiology and Pathology of Intracellular Protein and Lipid Traffic*" (C. Isidoro and G. Gaudino, eds), 63-68.

**131** Isecke R., Brossmer R. and Sonnino S. (1995) Synthesis of *N*-thioacetyl gangliosides GM1 and GM3. *Bioorg Med Chem Lett*, 5, 2805-2808.

**130** Fra A.M., Masserini M., Palestini P., Sonnino S. and Simons K. (1995) A photo-reactive derivative of ganglioside GM1 specifically cross-links VIP21-caveolin on the cell surface. *FEBS Lett*, 375, 11-14.

**129** Casellato R., Brocca P., Li S.-C., Li Y.-T. and Sonnino S. (1995). Isolation and structural characterization of *N*-acetyl and *N*-glycolylneuraminic acid containing GalNAc-GD1a isomers,  $\text{IV}^4\text{GalNAcIV}^3\text{Neu5GcII}^3\text{Neu5AcGgOse}_4\text{Cer}$  and  $\text{IV}^4\text{GalNAcIV}^3\text{Neu5AcII}^3\text{Neu5GcGgOse}_4\text{Cer}$  from bovine brain. *Eur J Biochem*, 234, 786-793.

**128** Li S.-C., Wu Y.-Y., Sugiyama E., Taki T., Kasaman T., Casellato R., Sonnino S. and Li Y.-T. (1995) Specific Recognition of the NeuAc in GM2-epitope by human GM2-activator protein. *J Biol Chem*, 270, 24246-24252.

**127** Carpo M., Nobile-Orazio E., Chigorno V. and Sonnino S. (1995) The anti-oligosaccharide antibodies present in sera from patients with motor neuron disease and neuropathy recognize the *N*-glycolylneuraminic acid containing gangliotetrahexosyloligosaccharide. *Glycoconjugate J*, 12, 729-731.

**126** Palestini P., Pitto M., Sonnino S., Omodeo-Sale' M.F. and Masserini M. (1995) Spontaneous transfer of GM3 ganglioside between vesicles. *Chem Phys Lipids*, 77, 253-260.

**125** Brocca P., Cantu' L. and Sonnino S. (1995) Aggregation properties of semisynthetic GD1a ganglioside (IV<sup>3</sup>Neu5AcII<sup>3</sup>Neu5AcGgOse<sub>4</sub>Cer) containing an acetyl group as acyl moiety. *Chem Phys Lipids*, 77, 41-49.

**124** Navon R., Khosrav ,R., Korczyn T., Massom M., Sonnino S., Fardeau M., Eymard B., Lefevre M., Turpin J.C., Rondot P. and Baumann N. (1995) A new mutation the HEXA gene associated with a spinal muscular atrophy phenotype. *Neurology*, 45, 539-543.

**123** Palestini P., Allietta M., Sonnino S., Tettamanti G., Thompson T.E. and Tillack T.W. (1995) Gel phase preference of ganglioside GM1 at low concentration in two-component, two-phase phosphatidylcholine bilayers depends upon the ceramide moiety. *BBA-Biomembranes*, 1235, 221-230.

**122** Acquotti D., Cantu' L., Ragg E. and Sonnino S. (1994) Geometrical and conformational properties of ganglioside GalNAc-GD1a, IV<sup>4</sup>GalNAcIV<sup>3</sup>Neu5AcII<sup>3</sup>Neu5AcGgOse<sub>4</sub>Cer. *Eur J Biochem*, 225, 271-288.

**121** Sonnino S., Cantu' L., Corti M., Acquatti D. and Venerando B. (1994) Aggregative properties of gangliosides in solution. *Chem Phys Lipids*, 71, 21-45.

**120** Poppe L., van Halbeek H., Acquotti D. and Sonnino S. (1994) Carbohydrate dynamics at a micellar surface: GD1a headgroup transformations revealed by NMR spectroscopy. *Biophys J*, 66, 1642-1652.

**119** Chigorno V., Valsecchi M. and Sonnino S. (1994) Biosynthesis of gangliosides containing [3-<sup>14</sup>C]-C18:1 and [3-<sup>14</sup>C]-C20:1 long chain bases after administrating [1-<sup>14</sup>C]-palmitic acid and [1-<sup>14</sup>C]-stearic acid to rat cerebellar granule cells in culture. *Eur J Biochem*, 221, 1095-1101.

**118** Sonnino S., Acquotti D., Cantu' L., Chigorno V., Valsecchi M., Casellato R., Masserini M., Corti M., Allevi P. and Tettamanti,G. (1994) Synthesis and aggregative properties of GM1 ganglioside (II<sup>3</sup>Neu5AcGgOse<sub>4</sub>Cer) containing D-(+)-2-hydroxy-stearic acid. *Chem Phys Lipids*, 69, 95-104.

**117** Rubino F., Zecca L. and Sonnino S. (1994) Characterization of a complex mixture of ceramides by Fast Atom Bombardment and precursor and fragment analysis Tandem Mass Spectrometry. *Biol Mass Spectrom*, 23, 82-90.

**116** Brocca P., Acquotti D. and Sonnino S. (1993)  $^1\text{H-NMR}$  study on ganglioside amide protons: evidence that the deuterium exchange kinetics are effected by the preparation of samples. *Glycoconjugate J*, 10, 441-446.

**115** Sonnino S., Acquotti D., Brocca,P., Cantu',L. and Corti M. (1993) Influence of the primary and secondary structure of the oligosaccharide chain on the aggregative and geometrical properties of gangliosides. *Indian J Biochem Bio*, 30, 370-375.

**114** Cantu' L., Corti M., Acquotti D. and Sonnino S. (1993) Aggregation properties of gangliosides: influence of the primary and secondary structure of the headgroup. *J Phys IV*, 3, 57-64.

**113** Valsecchi M., Palestini P., Chigorno V., Sonnino S. and Tettamanti G. (1993) Changes in the ganglioside long chain base composition of rat cerebellar granule cells during differentiation and aging in culture. *J Neurochem*, 60, 193-196.

**112** Rubino F.M., Zecca L. and Sonnino S. (1992) Characterization of Sphingosine Long-chain Bases by Fast Atom Bombardment and High-energy Collision-induced Decomposition Tandem Mass Spectrometry. *Org Mass Spectrom*, 27, 1357-1364.

**111** Losa G.A., Graber R., Chigorno V. and Sonnino S. (1992) Interaction of Gangliosides with the Methyltransferase-I of Microsomes from Normal and Neoplastic Human Mammary Gland. *Int J Cancer*, 52, 738-742.

**110** Riboni L., Bassi R., Sonnino S. and Tettamanti G. (1992) Formation of free sphingosine and ceramide from exogenous ganglioside GM1 by cerebellar granule cells in culture. *FEBS Lett*, 300, 188-192.

**109** Sonnino S., Acquotti D., Kirschner G., Uguaglianza A., Zecca L., Rubino F. and Tettamanti G. (1992) Preparation of lyso-GM1, ( $\text{II}^3\text{Neu5AcGgOse}_4$ -long chain bases) by one pot reaction. *J Lipid Res*, 33, 1221-1226.

**108** Bassi R. and Sonnino S. (1992) The role of the ganglioside lipid moiety in the process of ganglioside-cell interaction. *Chem Phys Lipids*, 62, 1-9.

**107** Riboni L., Acquotti D., Casellato R., Ghidoni R., Montagnolo G., Benevento A., Zecca L., Rubino F. and Sonnino S. (1992) Changes of the human liver GM3 ganglioside molecular species during aging. *Eur J Biochem.*, 203, 107-113.

**106** Sonnino S., Chigorno V., Valsecchi M., Pitto M. and Tettamanti G. (1992) Specific ganglioside-cell protein interactions: a study performed with GM1 ganglioside derivative containing photoactivable azide and rat cerebellar granule cells in culture. *Neurochem Int*, 20, 315-321.

**105** Valsecchi M., Chigorno V., Sonnino S., Tettamanti G. (1992) Rat cerebellar granule cells in culture associate and metabolize differently exogenous GM1 ganglioside molecular species containing C<sub>18</sub> or C<sub>20</sub> long chain base. *Chem Phys Lipids*, 60, 247-252.

**104** Cantu' L., Corti M., Casellato R., Acquotti D. and Sonnino S. (1991) Aggregation properties of GD1b, II<sup>3</sup>Neu5Ac<sub>2</sub>GgOse<sub>4</sub>Cer, and of GD1b-lactone, II<sup>3</sup>[α-Neu5Ac-(2-8,1-9)- α -Neu5Ac]GgOse<sub>4</sub>Cer, in aqueous solution. *Chem Phys Lipids*, 60, 111-118.

**103** Acquotti D., Fronza G., Ragg E. and Sonnino S. (1991) Three dimensional structure of GD1b and GD1b-monolactone gangliosides in dimethylsulphoxide: a nuclear overhauser effect investigation supported by molecular dynamics calculations. *Chem Phys Lipids*, 59, 107-125.

**102** Bassi R., Chigorno V., Fiorilli A., Sonnino S. and Tettamanti G. (1991) Exogenous gangliosides GD1b and GD1b-lactone, stably associated to rat brain P2 subcellular fraction, modulate differently the process of protein phosphorylation. *J Neurochem*, 57, 1207-1221.

**101** Palestini P., Sonnino S. and Tettamanti G. (1991) Lack of the ganglioside molecular species containing the C<sub>20</sub>-long-chain bases in human, rat, mouse, rabbit, cat, dog and chicken brains during prenatal life. *J Neurochem*, 56, 2048-2050.

**100** Nobile-Orazio E., Carpo M. and Legname G., Meucci, N., Sonnino, S. and Scarlato, G. (1990) Anti-GM1IgM antibodies in motor neuron disease and neuropathy. *Neurology*, 40, 1747-1750.

**99** Acquotti D., Poppe L., Dabrowski J., von der Lieth G.W., Sonnino S. and Tettamanti G. (1990) Three-dimensional structure of the oligosaccharide chain of GM1 ganglioside revealed by a distance-mapping procedure: a rotating and laboratory frame nuclear overhauser enhancement investigation of native glycolipid in dimethyl sulfoxide and in water-dodecylphosphocholine solutions. *J Am Chem Soc*, 112, 7772-7778.

**98** Sonnino S., Chigorno V., Valsecchi M., Bassi R., Acquotti D., Cantù L., Corti M. and Tettamanti G. (1990) Relationship between the regulation of membrane enzyme activities by gangliosides and a possible ganglioside segregation in membrane microdomains. *Indian J Biochem Bio*, 27, 353-358.

**97** Chigorno V., Valsecchi M., Acquotti D. Sonnino S. and Tettamanti G. (1990) Formation of tritium-labeled polysialylated gangliosides in the cytosol of rat cerebellar granule cells in culture following administration of (3H)GM1 ganglioside. *FEBS Lett*, 277, 164-166.

**96** Sonnino S., Cantù L, Corti M., Acquotti D., Kirschner G. and Tettamanti G. (1990) Aggregation properties of semisynthetic GM1 ganglioside (II3Neu5AcGgOse4Cer) containing an acetyl group as acyl moiety. *Chem Phys Lipids*, 56, 49-57.

**95** Cantù L., Corti M., Sonnino S. and Tettamanti G. (1990) Evidence for spontaneous segregation phenomena in mixed micelles of gangliosides. *Chem Phys Lipids*, 55, 223-229.

**94** Nobile-Orazio E., Legname G., Daverio R, Carpo M., Giuliani A., Sonnino S. and Scarlato G. (1990). Motor neuron disease in a patient with a monoclonal IgMk directed against GM1,GD1b and high molecular weight neural-specific glycoproteins. *Ann Neurol* 28,190-194.

**93** Trinchera M., Ghidoni R., Sonnino S. and Tettamanti G. (1990) Recycling of glucosylceramide and sphingosine for the biosynthesis of gangliosides and sphingomyelin in rat liver. *Biochem J*, 270, 815-820.

**92** Giuliani A., Calappi E., Borroni E., Whittaker V., Sonnino S. and Tettamanti G. (1990) Further studies on the gangliosidic nature of the cholinergic-specific antigen, Chol-1. *Arch Biochem Biophys*, 280, 211-216.

**91** Chigorno V., Valsecchi M., Acquotti D., Sonnino S. and Tettamanti G. (1990) Formation of a cytosolic ganglioside-protein complex following administration of photoreactive ganglioside GM1 to human fibroblasts in culture. *FEBS Lett*, 263, 329-331.

**90** Sonnino S., Bassi R., Chigorno V. and Tettamanti G. (1990) Further studies on the changes of chicken brain gangliosides during prenatal and postnatal life. *J Neurochem*, 54, 1653-1660.

**89** Sonnino S., Cantù L., Acquotti D., Corti M. and Tettamanti G. (1990) Aggregation properties of GM3 ganglioside (II3 Neu5AcLacCer) in aqueous solutions. *Chem Phys Lipids* 52, 231-241.

**88** Palestini P., Masserini M., Sonnino S., Giuliani A. and Tettamanti

G. (1990) Changes in the ceramide composition of rat forebrain gangliosides with age. *J Neurochem*, 54, 230-235.

**87** Fronza G., Kirschner G., Acquotti D. and Sonnino S. (1989) Synthesis, structure, and conformation of the dilactone derivative of GD1b ganglioside. *Carbohydr Res*, 195, 51-58.

**86** Bassi R., Riboni L., Sonnino S. and Tettamanti G. (1989) Lactonization of GD1b ganglioside under acidic conditions. *Carbohydr Res*, 193, 141-146.

**85** Miotti S., Leoni F., Canevari S., Sonnino S. and Colnaghi M. (1989) Immunoblotting detection of carbohydrate epitopes in glycolipids and glycoproteins of tumoral origin, in: "*Gangliosides and cancer*", Oettgen H.F. (ed.) VCH Publishers, New York, 168-175.

**84** Sonnino S., Chigorno V., Acquotti D., Pitto M., Kirschner G. and Tettamanti G. (1989) A photoreactive derivative of radio-labeled GM1 ganglioside: preparation and use to establish the involvement of specific proteins in GM1 uptake by human fibroblasts in culture. *Biochemistry*, 28, 77-84.

**83** Sonnino S., Acquotti D., Chigorno V., Pitto M., Montecucco C., Schiavo G., Kirschner G. and Tettamanti, G. (1988) Recent advances in the chemistry and technology of gangliosides. *Indian J Biochem Bio*, 25, 144-149.

**82** Leoni F., Magnani J.L., Miotti S, Canevari S., Pasquali M., Sonnino S. and Colnaghi, M.I. (1988) The antitumor monoclonal antibody MoV2 recognizes the Lewis a hapten. *Hybridoma*, 7, 129-139.

**81** Fronza G., Acquotti D., Bassi R., Tagliavacca L. and Sonnino S. (1988) Synthesis and structural characterization of the dilactone derivative of GD1a ganglioside. *Carbohydr Res*, 182, 31-40.

**80** Corti M., Cantù L., Sonnino S. and Tettamanti G. (1988) Aggregation properties of gangliosides in aqueous solutions, in: "*New Trends in Ganglioside Research: Neurochemical and Neuroregenerative Aspects*", (R.W.Ledeen, E.L.Hogan, G.Tettamanti, A.J.Yates, R.K.Yu, eds.) Fidia Research Series, Liviana Press, Padova 14, 79-91.

**79** Sonnino S., Riboni L., Acquotti D., Fronza G., Kirschner G, Ghidoni R. and Tettamanti G. (1988) Biochemistry of gangliosides lactones, in: "*New Trends in Ganglioside Research: Neurochemical and Neuroregenerative Aspects*", (R.W.Ledeen, E.L.Hogan, G.Tettamanti, A.J.Yates, R.K.Yu, eds.) Fidia Research Series, Liviana Press, Padova 14, 47-61.



**78** Li S.C, Sonnino S., Tettamanti G. and Li Y.T. (1988) Characterization of non specific activator protein for the enzymatic hydrolysis of glycolipids. *J Biol Chem*, 263, 6588-6591.

**77** Sonnino S., Ghidoni R., Gazzotti G., Acquotti D. and Tettamanti G. (1988) New trends in ganglioside chemistry., *Adv Exptl Med Biol*, 228, 437-464.

**76** Sonnino S., Acquotti D., Fronza G., Cantù L., Chigorno V., Pitto M., Kirschner G. and Tettamanti G. (1988) Semisynthetic preparation of N-glycolylneuraminic acid containing GM1 ganglioside: chemical characterization, physico-chemical properties and some biochemical features. *Chem Phys Lipids*, 46, 181-191.

**75** Corti M., Cantù L. and Sonnino S. (1987) Fundamentals of physico-chemical properties of gangliosides in solution, in: "*Gangliosides and modulation of neuronal functions*" (H.Rahmann ed.), NATO ASI Series vol.H7, 101-118.

**74** Ghidoni R., Trinchera M., Sonnino S., Chigorno V. and Tettamanti G. (1987) The sialic acid residue of exogenous GM1 ganglioside is recycled for biosynthesis of sialoglycoconjugate in rat liver. *Biochem J*, 247,157-164.

**73** Acquotti D, Fronza G., Riboni L., Sonnino S. and Tettamanti G. (1987) Ganglioside lactones: 1H-NMR determination of the inner ester position of GD1b-ganglioside lactone naturally occurring in human brain or produced by chemical synthesis. *Glycoconjugate J*, 4, 119-127.

**72** Leoni F., Miotti S., Carnevari S., Sonnino S., Ripamonti M. and Colnaghi M.I. (1986) Carbohydrate epitope defined by an antitumor monoclonal antibody detected on glycoproteins and a glycolipid by immunoblotting. *Hybridoma*, 5,289-296.

**71** Sonnino S., Riboni L. and Ghidoni R. (1986) Gangliosidi e processi di oncogenesi: relazione con le proprietà chimico-fisiche della membrana,(Gangliosides and oncogenesis: correlation with the physico-chemical properties of the membrane), in: "*La cellula neoplastica*", (Prodi G., Alberghina L.,Colnaghi M.I, Comoglio P.M.,Squarlini F, Calissano P., Pontremoli S., Rutilio G., eds.) Casa Editrice Ambrosiana 109-130.

**70** Sonnino S., Acquotti D., Riboni L., Giuliani A., Kirschner G. and Tettamanti G. (1986) New Chemical trends in ganglioside research. *Chem Phys Lipids*, 42, 3-26.

**69** Cantù L., Corti M., Sonnino S. and Tettamanti G. (1986) Light scattering measurements on gangliosides: dependence of micellar

properties on molecular structure and temperature. *Chem Phys Lipids*, 41, 315-328.

**68** Tettamanti G., Fiorilli A., Venerando B., Sonnino S. and Ghidoni R. (1986) Intracellular aspects of ganglioside metabolism and transport, in: “*Enzymes of lipid metabolism II.*”, (L.Freysz, M.Dreyfus, R.Massarelli, S.Gatt eds.), NATO ASI Series, A Plenum Press, New York 116, 563-575.)

**67** Sonnino S., Acquotti D., Kirschner, G., Fronza G. and Tettamanti G. (1986) Advances in ganglioside chemistry, in: “*Gangliosides and neuronal plasticity*”, (Tettamanti G., Leeden R.W, Sandhoff K., Nagai Y., Toffano G., eds.), Liviana Press-Springer Verlag, Padova, Fidia Research Series 6, 17-46.

**66** Riboni L., Sonnino S., Acquotti D., Malesci A., Ghidoni R., Egge H., Mingrino S. and Tettamanti G. (1986) Natural occurrence of ganglioside lactones. Isolation and characterization of GD1b inner ester from adult human brain. *J Biol Chem*, 261, 8514-8519.

**65** Ghidoni R., Trinchera M., Venerando B., Fiorilli A., Sonnino S. and Tettamanti G. (1986) Incorporation and metabolism of exogenous GM1 ganglioside in rat liver. *Biochem J*, 237, 147-155.

**64** Acquotti D., Sonnino S., Masserini M., Casella L., Fronza G. and Tettamanti G. (1986). A new chemical procedure for the preparation of gangliosides carrying fluorescent or paramagnetic probes on the lipid moiety. *Chem Phys Lipids*, 40, 71-86.

**63** Sonnino S., Chigorno V., Cardace G., Pitto M., Guidoni R. and Tettamanti G. (1986) Un nuovo metodo radiometrico per la determinazione della sialidasi attiva sui gangliosidi applicato alla determinazione della sede subcellulare dell'enzima in fibroblasti umani in coltura, (A new radiochemical method for the determination of ganglioside-sialidase in cultured human fibroblasts). *Rapporti Istisan* 5, 197-216.

**62** Chigorno V., Cardace G., Pitto M., Sonnino S., Guidoni R. and Tettamanti G. (1986) A radiometric assay for ganglioside sialidase applied to the determination of the enzyme subcellular location in cultured human fibroblasts. *Anal Biochem*, 153, 283-294.

**61** Hauttecoeur B., Sonnino S and Ghidoni R. (1985) Characterization of two molecular species of GD3 ganglioside from bovine buttermilk. *BBA-Biomembranes*, 833, 303-307.

**60** Miotti S., Aguanno S., Canevari S., Diotti A., Orlandi R., Sonnino S. and Colnaghi M.I. (1985) Biochemical Analysis of Human Ovarian Cancer-associated Antigens Defined by Murine Monoclonal

Antibodies. *Cancer Res*, 45, 826-832.

**59** Gazzotti G., Sonnino S. and Ghidoni R. (1985) Normal-phase-high-performance liquid chromatographic separation of non-derivatized ganglioside mixtures. *J. Chromatography A*, 48, 371-378.

**58** Sonnino S., Kirschner G., Fronza G., Egge H., Ghidoni R., Acquotti D. and Tettamanti G., (1985) Synthesis of GM1 ganglioside inner ester. *Glycoconjugate J*, 2, 343-354.

**57** Sonnino S., Kirschner G., Ghidoni R., Acquotti D. and Tettamanti G. (1985) Preparation of GM1 ganglioside molecular species, having homogeneous fatty acid and long chain base moieties. *J Lipid Res*, 26, 248-257.

**56** Chigorno V., Pitto M., Cardace G., Acquatti D., Kirschner G., Sonnino S., Guidoni R. and Tettamanti G. (1985) Association of gangliosides to fibroblasts in culture: A Study performed with GM1(14C)-labelled at the sialic acid acetyl group. *Glycoconjugate J*, 2, 279-291.

**55** Egge H., Katalinic J.P., Reuter G., Schauer R., Ghidoni R., Sonnino S. and Tettamanti G. (1985) Analysis of gangliosides using fast atom bombardment mass spectrometry. *Chem Phys Lipids*, 37, 127-141.

**54** Masserini M., Sonnino S., Giuliani A., Tettamanti G., Corti M., Minero C. and Degiorgio V. (1985) Laser-light scattering study of size and stability of ganglioside-phospholipid small unilamellar vesicles. *Chem Phys Lipids*, 37, 83-97.

**53** Tettamanti G., Sonnino S., Ghidoni R., Masserini M. and Venerando B. (1985) Chemical and functional properties of gangliosides. Their possible implication in the membrane-mediated transfer of information., in: "*Physics of amphiphiles. Micelles, vesicles and microemulsions*", (V. Degiorgio, M. Corti, eds.) Il Nuovo Cimento, Bologna, 607-636.

**52** Ghidoni R. and Sonnino S. (1984) Recent advances in ganglioside chemistry. *Ital J Biochem*, 33, 298-301.

**51** Tettamanti G., Ghidoni R., Venerando B., Fiorilli A. and Sonnino S. (1984) Intracellular aspects of ganglioside metabolism. *Colloque INSERM* 126, 135-150.

**50** Gazzotti G., Sonnino S. and Ghidoni R. (1984) Separation of ganglioside molecular species, with homogeneous long chain base composition, by reversed phase thin layer chromatography. *J Chromatogr A*, 315, 395-400

**49** Tomasi M., Battistini A., Cardelli M., Sonnino S. and D'Agnolo G. (1984) Interaction of cholera toxin with gangliosides: differential effects of the oligosaccharide of ganglioside GM1 and of micellar gangliosides. *Biochemistry*, 23, 2520-2526.

**48** Bremer E., Lavery S.B., Sonnino S., Ghidoni R., Canevari S., Hakomory S.-I. and Kannagi R. (1984) Characterization of a glycosphingolipid antigen, defined by the monoclonal antibody MBr1, specifically expressed in normal and neoplastic mammary gland epithelial cells. *J Biol Chem*, 259, 14773-14777.

**47** Tettamanti G., Sonnino S., Ghidoni R. and Leon A. (1984) Promotion of neuritogenesis in mouse neuroblastoma cells by exogenous gangliosides, in: "*Developmental Neuroscience Series*" Vol. 17, Elsevier Science Publ., Amsterdam, 399-403.

**46** Riboni L., Malesci A., Gaini M., Sonnino S., Ghidoni R., Tettamanti G. (1984) Ganglioside pattern of normal human brain, from samples obtained at surgery. A study especially referred to alkali labile species. *J Biochem*, 96, 1943-1946.

**45** Gazzotti G., Sonnino S., Ghidoni R., Orlando P. and Tettamanti G. (1984) Preparation of the tritiated molecular forms of gangliosides with homogeneous long chain base composition. *Glycoconjugate J*, 1, 111-121.

**44** Riboni L., Ghidoni R., Sonnino S., Omodeo-Salè F. and Gaini S.M., Berra B. (1984) Phospholipid content and composition of human meningiomas. *Neurochem Pathol*, 2, 171-188.

**43** Gazzotti G., Sonnino S., Ghidoni R., Kirschner G. and Tettamanti G. (1984) Analytical and preparative high-performance liquid chromatography of gangliosides. *J Neurosci Res*, 12, 179-192.

**42** Sonnino S., Ghidoni R., Gazzotti G., Kirschner G., Galli G. and Tettamanti G. (1984) High performance liquid chromatography preparation of the molecular species of GM1 and GD1a gangliosides with homogeneous long chain base composition. *J Lipid Res*, 25, 620-629.

**41** Sonnino S., Ghidoni R., Malesci A., Tettamanti G., Marx J., Hilbig R. and Rahmann H. (1984) Nervous system ganglioside composition of normothermic and hibernating dormice (*glis glis*). *Neurochem Int*, 6, 677-683.

**40** Facci L., Leon A., Toffano G., Sonnino S., Ghidoni R. and Tettamanti G. (1984) Promotion of neuritogenesis in mouse neuroblastoma cells by exogenous gangliosides. Relationship between the effects and the cells association of ganglioside GM1. *J*

*Neurochem*, 42, 299-305.

**39** Sonnino S., Ghidoni R., Fiorilli A., Venerando B. and Tettamanti G. (1984) Cytosolic gangliosides of rat brain: their fractionation into protein-bound complexes of different ganglioside composition. *J Neurosci Res*, 12, 193-204.

**38** Ghidoni R., Sonnino S., Chigorno V., Malesci A. and Tettamanti G. (1984) Comparative and developmental behaviour of alkali labile gangliosides in the brain. *Adv Exptl Med Biol*, 174, 307-318.

**37** Venerando B., Fiorilli A., Ghidoni R., Sonnino S., Chigorno V. and Tettamanti G. (1984) Ganglioside metabolism: new experimental approaches. *Ital J Biochem*, 33, 295-297.

**36** Tettamanti G., Ghidoni R., Sonnino S., Chigorno V., Venerando B., Giuliani A. and Fiorilli A. (1984) New approaches in the study of ganglioside metabolism, in: "Ganglioside Structure, Function, and Medical Potential", 273-284.

**35** Chigorno V., Sonnino S., Ghidoni R., Toffano G., Venerando B. and Tettamanti G. (1984) Changes in rabbit cerebrum and cerebellum gangliosides during postnatal life. A study especially referring to alkali labile gangliosides. *Neurochem Int*, 6, 191-197.

**34** Canevari S., Fossati G. Balsari A., Sonnino S. and Colnaghi M.I. (1983) Immunochemical analysis of the determinant recognized by a monoclonal antibody (MBr1) which specifically binds to human mammary epithelial cells. *Cancer Res*, 1301-1305.

**33** Sonnino S., Ghidoni R., Chigorno V., Masserini M. and Tettamanti G. (1983) Recognition by two- dimensional thin layer chromatography and densitometric quantification of alkali labile gangliosides from the brain of different animals. *Anal Biochem*, 128, 104-114.

**32** Ghidoni R., Sonnino S., Chigorno V., Venerando B. and Tettamanti G. (1983) Occurrence of glycosylation and deglycosylation of exogenously administered ganglioside GM1 in mouse liver. *Biochem J*, 213, 321-329.

**31** Ghidoni R., Sonnino S., Chigorno V., Venerando B., Tettamanti G. (1983) Differences in liver ganglioside patterns in various inbred strains of mice. *Biochem J*, 209, 885-888.

**30** Corti M., Degiorgio V., Ghidoni R. and Sonnino S. (1982) Micellar properties of gangliosides., in 'Solution behaviour of surfactants, in: "Theoretical and applied aspects", by E.J.Sendler and K.L.Mittal, Plenum Press, 573-594.

**29** Corti M., Degiorgio V., Ghidoni R. and Sonnino S. (1982) Mixed micelles of GM1 ganglioside and a nonionic amphiphile. *J Phys Chem B*, 86, 2533-2537.

**28** Canevari S., Fossati G., Balsari A., Sonnino S. and Colnaghi M.I. (1982) Biochemical characterization of an antigenic determinant recognized by a monoclonal antibody (MB1) which specifically binds to human epithelial mammary cells., in: "*Tumour progression and markers*", K.Lapis, A.Jeney and M.R. Price eds., Kugler publications Amsterdam, 405-409.

**27** Venerando B., Roberti S., Sonnino S., Fiorilli A. and Tettamanti G. (1982) Interactions of ganglioside GM1 with human and fetal calf sera. Formation of ganglioside-serum albumin complexes. *BBA-Biomembranes*, 692, 18-26.

**26** Sonnino S., Ghidoni R., Chigorno V. and Tettamanti G. (1982) Chemistry of gangliosides carrying O-acetylated sialic acid, in: "*New Visitas in Glycolipid Research*, Edited by Makita, Handa, Taketomi and Nagai (Plenum Publishing Corporation 1982)" 55-69.

**25** Chigorno V., Sonnino S., Ghidoni R. and Tettamanti G. (1982) Isolation and characterization of a tetrasialoganglioside from mouse brain, containing 9-O-acetyl-N-acetylneuraminic acid. *Neurochem Int*, 4, 531-539.

**24** Chigorno V., Sonnino S., Ghidoni R. and Tettamanti G. (1982) Densitometric quantification of brain gangliosides separated by two-dimensional thin layer chromatography. *Neurochem Int*, 4, 397-403.

**23** Masserini M., Sonnino S., Guidoni R., Chigorno V. and Tettamanti G. (1982) Galactose oxidase action on GM1 ganglioside in micellar and vesicular dispersions. *BBA-Biomembranes*, 688, 333-340.

**22** Leon A., Facci L., Toffano G., Sonnino S. and Tettamanti G. (1981) Activation of (Na<sup>+</sup>, K<sup>+</sup>)-ATP-ase by nanomolar concentrations of GM1 ganglioside. *J Neurochem*, 37, 350-357.

**21** Corti M., Degiorgio V., Sonnino S. and Guidoni R. (1981) Light scattering study of ganglioside micelles and mixed micelles with a nonionic amphiphile., in: "*Scattering techniques applied to supramolecular and nonequilibrium systems*", (S.H.Che, B.Chu, R.Nossal eds.), 337-349.

**20** Ghidoni R., Sonnino S., Masserini M., Orlando P. and Tettamanti G. (1981) Specific tritium labelling of gangliosides at the 3-position of sphingosines. *J Lipid Res*, 22, 1286-1295.

**19** Sonnino S., Ghidoni R., Masserini M., Aporti F. and Tettamanti G.



(1981) Changes in rabbit brain cytosolic and membrane bound gangliosides during prenatal life. *J Neurochem*, 36, 227-232.

**18** M.Corti, V.Degiorgio, S.Sonnino, R.Ghidoni, M.Masserini and G.Tettamanti, (1981) GM1 ganglioside-Triton X-100 mixed micelles: changes of micellar properties studied by laser-light scattering and enzymatic methods. *Chem Phys Lipids*, 28, 197-214.

**17** Bertoli E., Masserini M., Sonnino S., Ghidoni R., Cestaro B. and Tettamanti G. (1981) Electron paramagnetic resonance studies on the fluidity and surface dynamics of egg phosphatidylcholine vesicles containing gangliosides. *BBA-Biomembranes*, 467, 196-202.

**16** Tettamanti G., Venerando B., Roberti S., Chigorno V., Sonnino S. and Ghidoni R. (1981) The fate of exogenously administered brain gangliosides, in: "*Gangliosides in neurological and neuromuscular function, development and repair*", (M.M.Rapport and A.Gorio, eds.) Raven Press, New York, 225-240.

**15** Baumann M., Sonnino S., Ghidoni R., Harpin M.-L. and Tettamanti G. (1980) Developmental profile of a new ganglioside, carrying 9-O-acetyl, N-acetylneuraminic acid, in the brain of normal mice and 12 demyelinating quacking mutants, in: "*Multidisciplinary Approach to Brain Development*", (C.Di Benedetta, G.Porcellati, G.Gombos eds.) Elsevier Publ. Co., Amsterdam, 51-56.

**14** Ghidoni R., Sonnino S., Tettamanti G., Baumann N., Reuter G. and Schauer R. (1980) Isolation and characterization of a trisialoganglioside from mouse brain, containing 9-O-acetyl-N-acetylneuraminic acid. *J Biol Chem*, 255, 6990-6995.

**13** Masserini M., Sonnino S., Ghidoni R. and Tettamanti G. (1980) GM1 ganglioside-Triton X-100 mixed micelles: transitions among different micellar species monitored by physicochemical and enzymatic methods. *BBA-Biomembranes*, 601, 282-288.

**12** Corti M., Degiorgio V., Ghidoni R., Sonnino S. and Tettamanti G. (1980) Laser-light scattering investigation of the micellar properties of gangliosides. *Chem Phys Lipids*, 26, 225-238.

**11** Tettamanti G., Preti A., Cestaro B. Masserini M., Sonnino S. and Ghidoni R. (1980) Gangliosides and associated enzymes at the nerve-endings membranes, in: "*Cell surface glycolipids*", (C.C.Sweeley ed.) ACS Symposium Series, 128, 321-343.

**10** Tomasi M., Roda L.G, Ausiello C., D'Agnolo G., Venerando B., Ghidoni R., Sonnino S. and Tettamanti, G. (1980) Interaction of GM1 ganglioside with bovine serum albumin. Formation and isolation of multiple complexes. *Eur J Biochem*, 111, 315-324.

**9** Tettamanti G., Preti A., Cestaio B., Venerando B., Lombardo A., Guidoni R. and Sonnino, S. (1980) Gangliosides, neuraminidase and sialyltransferase at the nerve endings. *Adv Exptl Med Biol*, 125, 263-281.

**8** Sonnino S., Ghidoni R., Marchesini S. and Tettamanti G. (1979) Cytosolic gangliosides: occurrence in calf brain as ganglioside-protein complexes. *J Neurochem*, 33, 117-121.

**7** Sonnino S., Ghidoni R., Baumann N., Harpin M.-L. and Tettamanti G. (1978) Occurrence in mouse brain of a new ganglioside carrying an alkali labile linkage. *Bull Mol Biol Med*, 3, 170-178.

**6** Sonnino S., Ghidoni R., Galli G. and Tettamanti G. (1978) On the structure of a new, fucose containing ganglioside from pig cerebellum. *J Neurochem*, 31, 947-956.

**5** Baumann N., Sonnino S., Ghidoni R., Harpin M.-L. and Tettamanti G. (1978) Étude des gangliosides chez les Souris normales (C57 B1/6J) et Quaking. Presence et caractérisation d'un ganglioside labile en milieu alcalin. *C.R.Acad.Sci.Paris* 286, 1807-1810.

**4** Ghidoni R., Sonnino S. and Tettamanti G. (1978) Behaviour of Gangliosides on Dialysis., *Lipids*, 13, 820-822.

**3** Marchesini S., Sonnino S. and Tettamanti G. (1978) Fractionation of brain cytosoluble glycoproteins by hydroxylapatite-cellulose gel column chromatography. *Ital J Biochem*, 27, 211-232.


**2** Ghidoni R., Sonnino S., Tettamanti G., Wiegandt H. and Zambotti V. (1976) On the structure of two new gangliosides from beef brain. *J Neurochem* 27, 511-515.

**1** Tettamanti G., Bonali F., Sonnino S. and Zambotti V. (1974) In vivo incorporation of D-Glucose-U-C14 into the tetrasialoganglioside in rat brain. *Experientia* 30, 330-331.

**Brevetti** **2** Sonnino S e Chiricozzi E (2018) Oligosaccaridi per l'uso nel trattamento della malattia di Parkinson.

**1** Kirschner G. and Sonnino S. (2000) Process for the preparation of ganglioside GM3 by acid hydrolysis of ganglioside nesters and its use in the pharmaceutical field, *World Intellectual Property organization International Bureau, International application published under the patent cooperation treaty (PCT)*.

**Dati personali** Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 (Codice in materia di protezione dei dati personali) e sue successive modifiche e integrazioni, nonché del Regolamento UE 679/2016 (Regolamento Generale sulla Protezione dei dati o, più brevemente, RGPD).



Firma

Data, 23/11/2018