

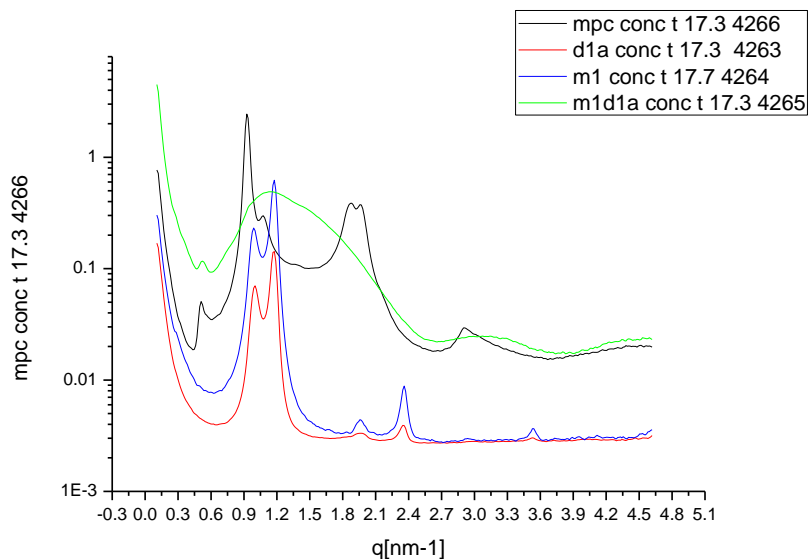


	<p>Experiment title: Hybrid-gangliosides quasigemini-glycolipids aggregates: local and mesoscopic structural properties.</p>	<p>Experiment number: SC-3260</p>
<p>Beamline:</p>	<p>Date of experiment: from: 10/09/2011 to:12/09/2011</p>	<p>Date of report:</p>
<p>Shifts: 6</p>	<p>Local contact(s): Manuel Fernandez Martinez</p>	<p><i>Received at ESRF:</i></p>
<p>Names and affiliations of applicants (* indicates experimentalists):</p> <p>*Del Favero Elena, *Cantù Laura, *Motta Simona, *Rondelli Valeria, *Brocca Paola University of Milan</p>		

Report:

We performed SAXS and WAXS experiments on mixed phospholipid-ganglioside aggregates. In particular we added minor amounts (1-10% mole fraction) of GM1, GD1a or hybrid GM1-GD1a ganglioside derivative to DMPC bilayers (diluted and ~4% total lipid concentration) either symmetric or only on the outer layer of extruded vesicles. (~5 mole fractions). We followed the structural evolution of the mixed aggregate on the mesoscopic and local scales as a function of hybrid content and across the lipid melting temperature.

As an example we report in the graphic four spectra relative to pure DMPC and the three mixed systems. DMPC shows the typical lamellar arrangement in the rippled phase. The presence of small amounts of ganglioside alters both the mesoscale arrangement, lamellar spacing, and the local order (phase of the lipid chains). More effective on the mesoscale order is the presence of the hybrid GM1-GD1a ganglioside derivative (green line).



The systems were also followed as a function of temperature in the range 17-60 °C.

Experiments were also performed on mixed unilamellar vesicles. In the figure we report, as an example, results on extruded DMPC vesicles with GM1 asymmetrically inserted in the outer layer (by incubation of GM1 micelles). Different spectra refer to different temperatures, across the chain melting transition. The presence of gangliosides alters, depending on the specie, the transition temperature and the form factor of the phospholipid vesicles.

