	Experiment title: Supramolecular structure and phase behavior of self-assembled complexes of PEGylated lipids, DNA and bivalent metal cations	**Experiment number**: SC-2642
Beamline: ID02	**Date of experiment**: from: 17 July 2009 to: 20 July 2009	**Date of report**: 25 February 2016
Shifts: 9	**Local contact(s)**: Michael Sztucki	*Received at ESRF:*

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Report:

The experimental results have been published in the paper

P. Bruni, O. Francescangeli, M. Marini, G. Mobbili, M. Pisani and A. Smorlesi
"Can Neutral Liposomes be Considered as Genetic Material Carriers for Human Gene Therapy?", *Mini-Reviews in Organic Chemistry*, **2011**, *8*, 38-48

whose abstract is reported below

Among the synthetic vectors exploitable in Human Gene Therapy (HGT), complexes of DNA with cationic liposomes (lipoplexes) are considered the best candidates. Some degree of cytotoxicity and a limited stability on serum are still limiting factors for applications in vivo. On the contrary the corresponding complexes of neutral liposomes are enough stable and non toxic. This review has the aim to offer a survey of existing data, namely structural properties, on neutral liposomes from the point of view of HGT; and to compare, whenever possible, the different features of the two classes of compounds. The outlook is that in near future neutral liposomes could behave as efficient and safe vectors of genetic material.