which suggests a protein–protein interaction. In conclusion, we demonstrate for the first time that a membrane clearly of ER origin is at discrete areas physically associated with another membrane, here the chloroplast outer envelope membrane. The study was conducted at the Göteborg Centre for Cellular Imaging and the Göteborg Centre for Biophysical Imaging.

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PO 49
Articaine interaction with DSPC bilayer: a ^{13}C and ^{31}P solid-state NMR study

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Articaine hydrochloride, 4-methyl-3(2-[propylamino]propionamido)-2-thiophenecarboxylic acid, methyl ester hydrochloride, is a local anaesthetic commonly used in dentistry, and is classified as an amide local anaesthetic. Solid-state ^{13}C and ^{31}P NMR were used to investigate the uncharged articaine species (sample pH of 10.0) when interacting with distearoyl phosphatidylcholine (DSPC) model membranes. The DSPC phospholipid bilayer was studied at four different molar ratios of articaine, 10, 25, 40, and 55 mol%, respectively. The articaine concentration dependent decrease in the DSPC bilayer gel to liquid crystalline phase-transition temperature demonstrates substantial articaine interaction with this bilayer. A DSPC bilayer contains a large hydrophobic core and the ^{13}C and ^{31}P NMR spectra of the 40 mol% articaine containing sample demonstrate a disturbance in the molecular packing of the polar bilayer region that extends into the hydrophobic region, evidenced by carbon 2 and 3 of the stearoyl acyl chains. Observed ^{31}P and ^{13}C NMR spectral changes when articaine is increased from 40 to 55 mol%, suggest formation of articaine aggregates and decrease in DSPC bilayer perturbation at the latter articaine level.

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PO 50
Olanzapine interaction with DPPC/DPPS and DPPC/POPS bilayers: a ^{13}C and ^{31}P solid-state NMR study

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Olanzapine, a relatively new thienobenzodiazepine derivative, is widely used as an antipsychotic agent and has become one of the most commonly used atypical antipsychotics with antagonism of dopamine D1, muscarinic M1-5, α1-adrenoceptors and histamine H1 receptors. In the present study, ^{13}C and ^{31}P solid-state NMR techniques were employed to study the interaction of olanzapine on DPPC (60%)/POPS (40%) bilayer at two hydrations (30 and 50 wt.% H_2O) as well as a DPPC (60%)/DPPS (40%) bilayer (36 wt.% H_2O). The results show that the serine head-group is directly affected by olanzapine interdigitation in the bilayer, and that the olanzapine interaction with PS is to a great extent caused by electrostatic attraction to the serine head-group. The experiments of this study were carried out at a sample pH of 7.4 were both a neutral and a positively charged form of olanzapine are present. The ^{31}P MAS NMR experiments show two (major) new ^{31}P resonances both for the PS and the PC phosphorous in presence of olanzapine. Furthermore, olanzapine displays polymorphism and can form both dehydrated and hydrated dimers in the solid-state. Thus, it cannot be ruled out that some of the bilayer interaction of olanzapine is carried out by olanzapine-dimers. Static ^{31}P NMR spectra demonstrate a substantial decrease in chemical shift anisotropy (CSA) of the olanzapine containing bilayer. The corresponding olanzapine caused increase in phospholipid head-group mobility could very well lead to a changed lateral phospholipid organization of the bilayer. In fact, the ^{31}P magic angle spinning (MAS) NMR spectra of this study indicate that imperfections in DPPC and POPS mixing are reduced in presence of olanzapine.

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PO 51
Coarse-grain membrane models

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Biomembranes are multi-component and complex systems. To relate their structure to their biological