Supporting Information

Cholesterol Inhibits Oxygen Permeation Through Biological Membranes: Mechanism Against Double-Bond Peroxidation

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Figure S1: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-oleoyl-glycero-3-phosphocholine (POPC) bilayer. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S2: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-linoleoyl-snglycero-3-phosphocholine (PLPC) bilayer. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S3: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-arachidonoyl-snglycero-3-phosphocholine (PAPC) bilayer. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S4: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-oleoyl-glycero-3-phosphocholine (POPC) bilayer with cholesterol. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S5: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-linoleoyl-snglycero-3-phosphocholine (PLPC) bilayer with cholesterol. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S6: The trajectories of 16 oxygen (O_2) molecules in the 1-palmitoyl-2-arachidonoylsn-glycero-3-phosphocholine (PAPC) bilayer with cholesterol. The relative positions from the bilayer center (at 0 nm) are shown. The phosphorus atoms in the lipid headgroups, the carbon atoms in the lipids' carbonyl groups, and the oxygen molecules are shown by the black, blue, and red lines, respectively.



Figure S7: The density profiles of the lipids and cholesterols along the z-direction.