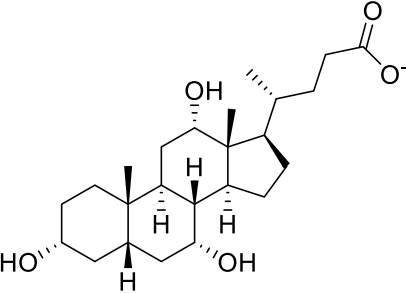
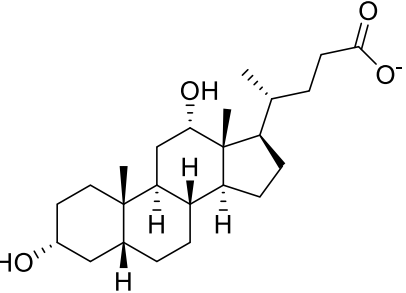
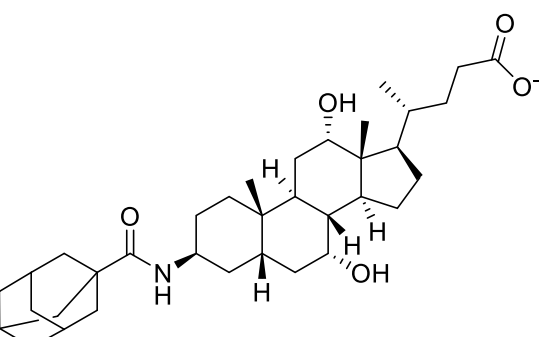
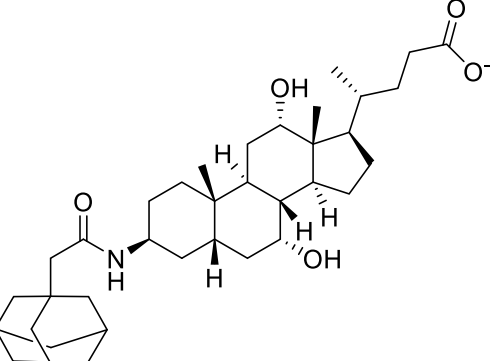
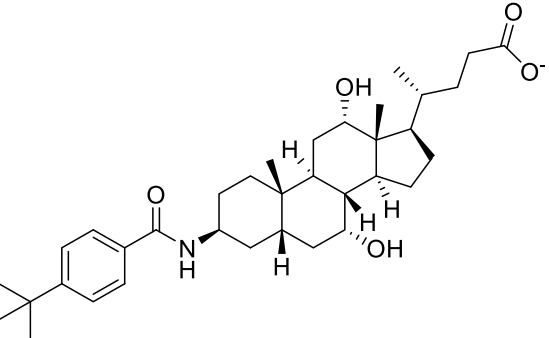
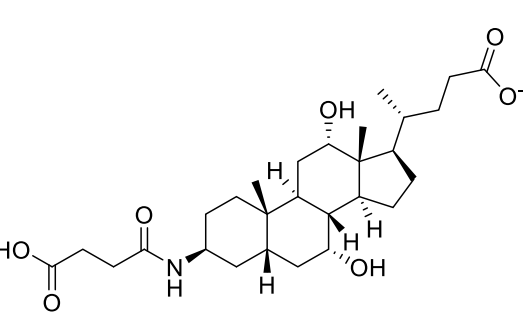
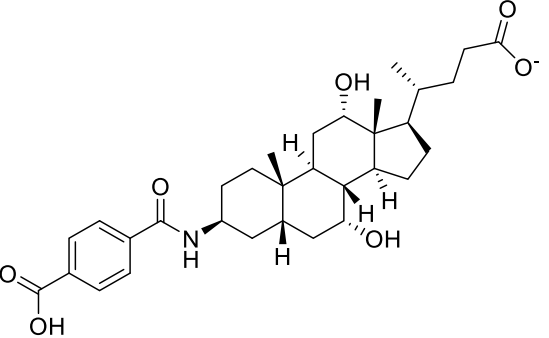
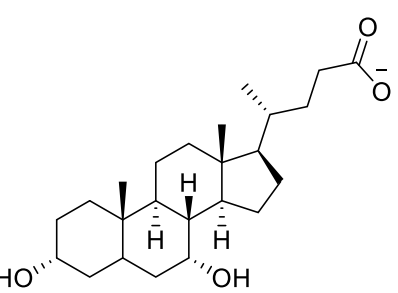
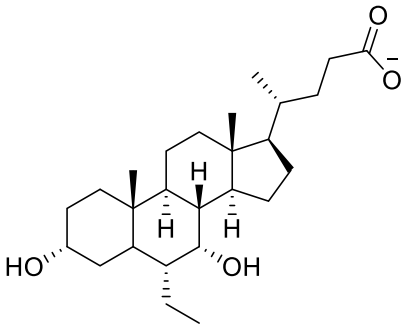
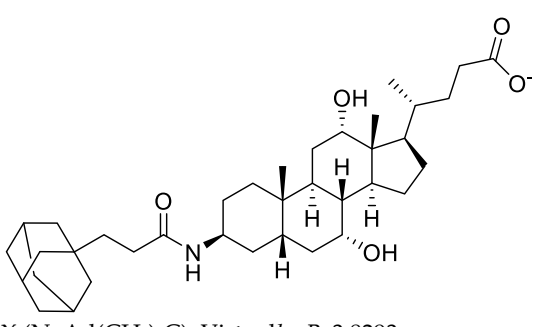
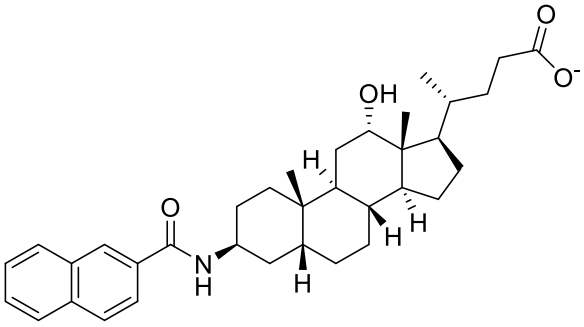
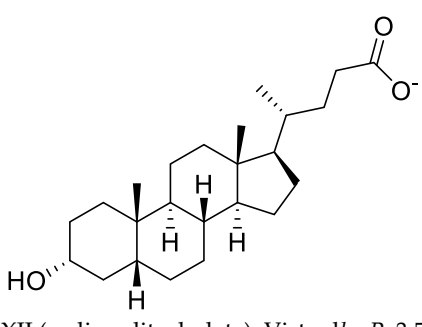
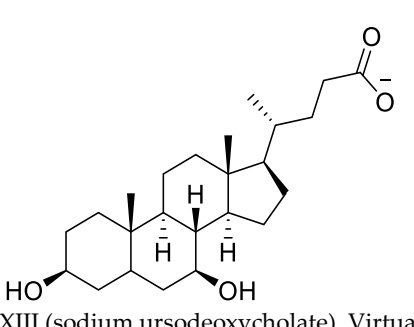
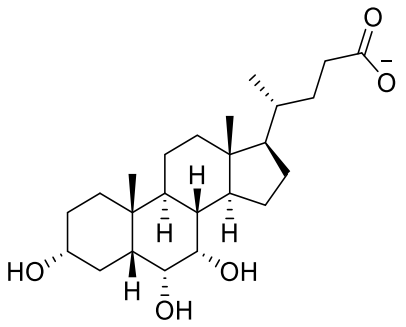
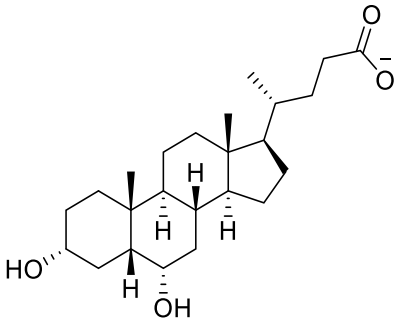


Supplementary Information

Table S1 Structures of the studied compounds

 <p>I (NaC) VirtuallogP=1.3768</p>	 <p>II (NaDC), VirtuallogP=2.3453</p>
 <p>III (NaAdC), VirtuallogP=3.2291</p>	 <p>IV (NaAdCH<sub>2</sub>C), VirtuallogP=3.2535</p>
 <p>V (NatbutPhC), VirtuallogP=4.2301</p>	 <p>VI (NaSuccC), VirtuallogP=1.0046</p>
 <p>VII, NaterephtC, VirtuallogP=1.4084</p>	 <p>VIII (sodium chenodeoxycholate, NaCDC), VirtuallogP=2.2348</p>

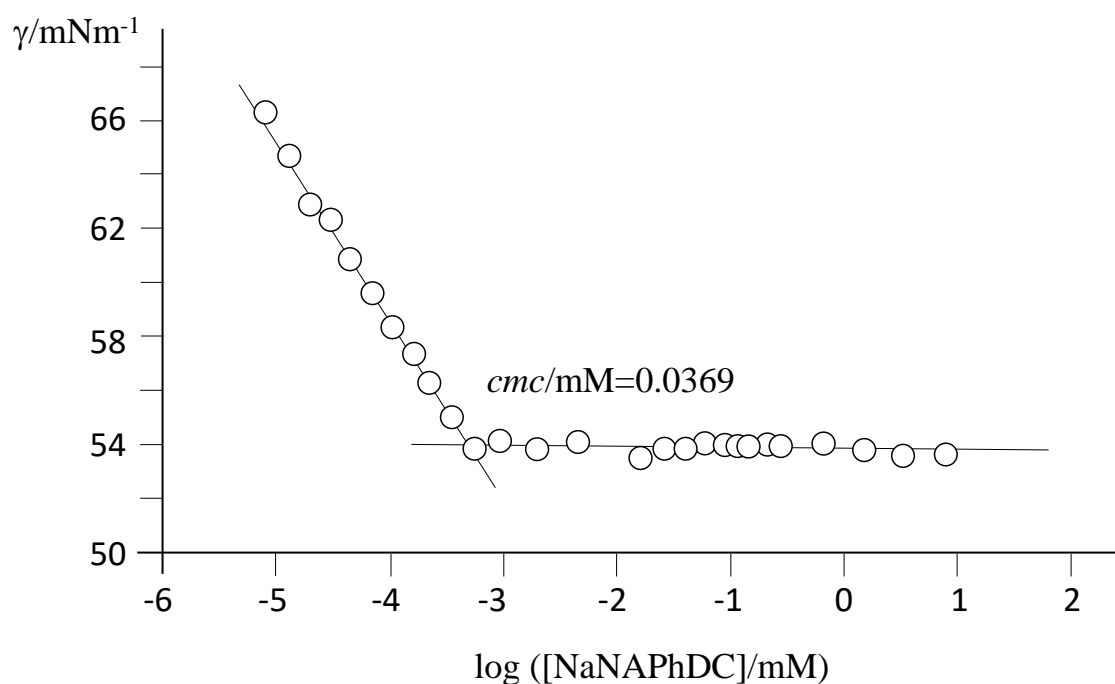
 <p>IX (sodium obeticholate), VirtuallogP=3.0851</p>	 <p>X (NaAd(CH<sub>2</sub>)<sub>2</sub>C), VirtuallogP=3.8293</p>
 <p>XI (NaNAPhDC), VirtuallogP=4.4634</p>	 <p>XII (sodium lithocholate), VirtuallogP=3.5081</p>
 <p>XIII (sodium ursodeoxycholate), VirtuallogP=2.3460</p>	 <p>XIV (hyocholate), VirtuallogP=1.5761</p>
 <p>XV (hyodeoxycholate), VirtuallogP=2.2667</p>	

Surface tension measurements were carried out in a Drop volume Tensiometer TVT2 from Lauda. Temperature was kept constant at 25 °C by recirculating water from a PolyScience 9100 thermostat. Average surface tension values were obtained from four series of 3-6 drops each. Sets of solutions were prepared according to the step-by-step dilution-extraction method [1].

### **cmc determination of NaNAPhDC**

The synthesis was published by Trillo *et al* [2].

Experimental conditions: NaOH/M=0.01.



FigureS1. **cmc determination of NaNAPhDC** (sodium 4-((3S,5R,8R,9S,10S,12S,13R,14S)-3-(2-naphthamido)-12-hydroxy-10,13-dimethylhexadecahydro-1H-cyclopenta[a]phenanthren-17-yl)pentanoate)

**cmc determination of NaAd(CH<sub>2</sub>)<sub>2</sub>C:**

sodium 4-((3S,5R,8R,9S,10S,12S,13R,14S)-3-(3-((3S,5S,7S)-adamantan-1-yl)propanamido)-12-hydroxy-10,13-dimethylhexadecahydro-1H-cyclopenta[a]phenanthren-17-yl)pentanoate.

The synthesis was published by Miragaya [3].

Experimental conditions: Carbonate/Bicarbonate buffer 50.60 mM, pH 10.35

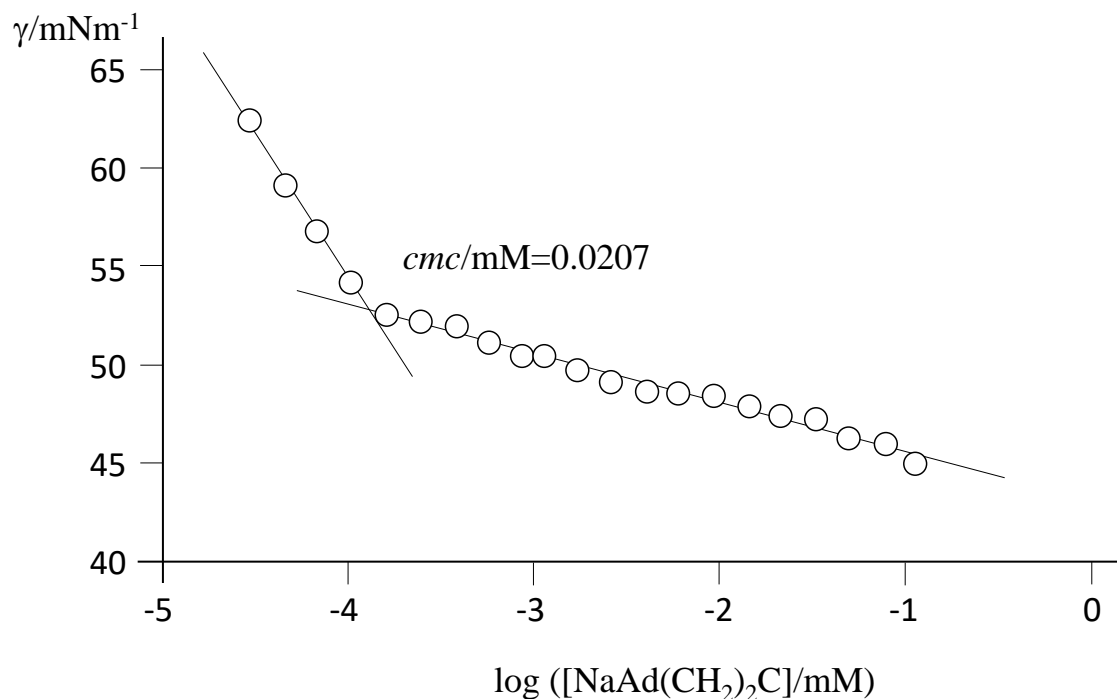


Figure S2. **cmc determination of NaAd(CH<sub>2</sub>)<sub>2</sub>C:** sodium 4-((3S,5R,8R,9S,10S,12S,13R,14S)-3-(3-((3S,5S,7S)-adamantan-1-yl)propanamido)-12-hydroxy-10,13-dimethylhexadecahydro-1H-cyclopenta[a]phenanthren-17-yl)pentanoate.

1. Gill, S.J.; Dec, S.F.; Olofsson, G.; Wadsö, I. Anomalous heat capacity of hydrophobic solvation. *J. Phys. Chem.* **1985**, *89*, 3758-3761.
2. Trillo, J.V.; Meijide, F.; Jover, A.; Soto, V.H.; de Frutos, S.; di Gregorio, M.C.; Luciano, G.; Vázquez Tato, J. Self-aggregation mechanism of a naphthylamide cationic derivative of cholic acid. From fibers to tubules. *RSC Adv.* **2014**, *4*, 5598-5606.
3. Miragaya Otero, J. Síntesis y caracterización de surfactantes derivados de sales biliares, adamantanos, norbornanos, tioles, nanopartículas de Au y resinas epoxi. Santiago de Compostela, 2015.