AMPHIPHILE-INDUCED VESICULATION IN AGED HEREDITARY SPHEROCYTOSIS ERYTHROCYTES INDICATES NORMAL MEMBRANE STABILITY PROPERTIES UNDER NON-STARVING CONDITIONS

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Hereditary spherocytosis (HS) erythrocytes, with a primary defect in band 3 protein (band 3) or ankyrin, were incubated (37°C, 60 min) with amphipiles (detergents) at high sublytic concentrations or energy depleted (37°C, 24h, without glucose).

In line with previous studies, control and HS cells responded differently to glucose-starvation, i.e. during glucose-starvation the release of acetylcholinesterase (exovesicles) from HS erythrocytes was significantly higher (11%) compared to that from control erythrocytes (1%). Interestingly, control and HS cells responded similarly to amphiphile-treatment. Amphipiles induced similar shape alterations and a similar amount (14-15%) of acetylcholinesterase release in control and HS erythrocytes (non-starving conditions). Furthermore, the size and shape of amphiphile-induced exo- and endovesicles released from control and HS erythrocytes were similar.

Our results suggest that the stability properties of the membrane are not seriously disturbed in aged HS erythrocytes under non-starving conditions.