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The effect of Polbax extract on lipofuscin accumulation in cultured neonatal rat cardiac myocytes.

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Polbax, a water-soluble extract of fresh pollen grains and pistils, was tested for its ability to influence the accumulation of lipofuscin (age pigment) in cultured neonatal rat cardiac myocytes. Exposure for 3 weeks to Polbax at concentrations of 0.1, 1.0 or 10 mg/L decreased lipofuscin accumulation morphometrically assayed using laser scanning microscopy images (green excitation light) of formaldehyde-fixed cells, by 24%, 41% or 43%, respectively. Based on the knowledge that oxidative stress and iron-catalysed peroxidation play an important role in lipofuscinogenesis, we suggest that Polbax may slow lipofuscin formation due to antioxidant activities, perhaps involving intralysosomal dismutation of superoxide produced by autophagocytosed mitochondria and/or iron-chelation.