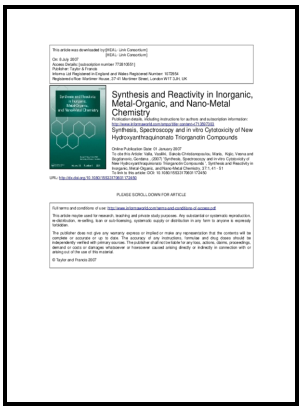
Investigation of the chemistry of the action of triorganotin compounds on mitochondria.

University of East Anglia - Potential compounds for the treatment of mitochondrial disease



Description: -
-Investigation of the chemistry of the action of triorganotin compounds on mitochondria.
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Notes: Thesis (Ph.D.) - University of East Anglia, School of Chemical Sciences, 1978.
This edition was published in 1978

Tags: #Design, #Synthesis, #and #Biological #Characterization #of #Novel #Mitochondria #Targeted #Dichloroacetate

mitochondrion

The relative expression levels of the target genes was determined using the ΔΔCt method with the calculated primer efficiencies. No external, internal, or skeletal malformations were detected in fetuses, suggesting embryolethality, but not teratogenic effects in monkeys 59,60. A significant increase in motor function and the mRNA levels of key β oxidation enzymes were reported.

Triorganotin as a compound with potential reproductive toxicity in mammals

Consequently, Pyruvate levels would increase. Unfortunately, these OT are also suspected to cause endocrine-disrupting effects in mammals, including humans 15 and rodents 16,17 , due in part to their possible transfer through marine food chains and to the consumption of contaminated seafood. Furthermore, a 6 month open-label trial was conducted on seven MELAS patients and was shown to reduce serum lactate levels while improving some clinical outcome measures.

Mitochondria as a possible target for nicotine action

Particular attention has been given to tributyltins which are highly toxic components of antifouling paints.

Potential compounds for the treatment of mitochondrial disease

Cells were treated as shown in. Glutathione is a potent reducing agent that detoxifies ROS and other electrophiles present in the organelle. Dimethylglycine Dimethylglycine DMG is an amino acid derivative thought to be oxidized in mitochondria where it donates electrons to the quinone pool, therefore bypassing compromised upstream Complexes I and II.

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