

Lipid Content in the Sea Urchin Embryos Under Nickel Stress

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Nickel is a heavy metal toxic for living organisms even at low concentrations. Sea urchin embryos represent a good model system for testing the effects of physical and chemical stress, like heavy metals, on development and cell viability. In this study, to investigate the effect of nickel on sea urchin development, a comparative analysis of lipid composition was performed in the sea urchin (*Strongylocentrotus nudus*) embryos under nickel stress. Among the identified fatty acids, γ -linoleic acid (C18:3n6) was the predominant fatty acid and followed by palmitic acid (C16:0). The total content of fatty acids and phospholipids including phosphatidylcholine and phosphatidylinositol, phosphatidylglycerol, phosphatidylserine and phosphatidylethanolamine showed no significant changes by exposure of nickel. In particular, phosphatidylglycerol (36:3) species increased under nickel stress. These results suggest that changes in the phosphatidylglycerol composition under nickel stress conditions are metal-specific in the sea urchin development.