LIPIDOMIC PROFILING OF DICTYOSTELIUM DISCOIDEUM

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Abstract:

The lipid profile of Dictyostelium discoideum, a cellular slime mold found evolutionarily between plants and animals, has never been clearly defined. To address this, the fatty acid content of vegetative cells was analyzed by gas chromatography-mass spectrometry of fatty acid methyl esters and their identities verified with synthesized authentic standards. The synthetic scheme developed to produce the unusual fatty acids found in D. discoideum was engineered to afford the labeling of compounds (2H) for use in feeding studies to elucidate the fatty acid elongation and desaturation pathways present in D. discoideum. After establishing the fatty acid profile and acyl metabolic pathway, an initial understanding the complex lipids present in D. discoideum, chiefly sphingolipids, was sought. Triple quadrupole and quadrupole time-of flight mass spectrometers equipped with electrospray ionization sources were used to identify these complex lipids.

Description:

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