Applications of differential subordinations for certain classes of p-valent functions associated with generalized Srivastava-Attiya operator

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Abstract:

The object of the present paper is to investigate some inclusion relations and other interesting properties for certain classes of p-valent functions involving generalized Srivastava-Attiya operator by using the principle of differential subordination.

Author Keywords: differential subordination; integral operator; p-valent functions

KeyWords Plus: LERCH-ZETA-FUNCTION; STARLIKE FUNCTIONS; UNIVALENT-FUNCTIONS; INTEGRAL-OPERATORS; FAMILIES

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Some subordination and superordination results of generalized Srivastava-Attiya operator

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In this article, we obtain some subordination and superordination-preserving results of the generalized Srivastava-Attyia operator. Sandwich-type result is also obtained.
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Consumption of c9,t11-18 : 2 or t10,c12-18 : 2 enriched dietary supplements does not influence milk macronutrients in healthy, lactating women

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Abstract:

Substantial research suggests that the t10,c12-18:2, but not the c9,t11-18:2, isomer of conjugated linoleic acid (CLA) reduces milk fat synthesis in lactating bovine and rodent species. Because fat is the major energy-yielding component in human milk, we were interested in whether this is true for women as well. Thus, the effects of c9,t11-18:2 and t10,c12-18:2 on milk fat were examined in breast-feeding women (n = 12) in a double-blind, placebo-controlled, crossover study with latin-square design. The study was divided into six periods: baseline (3 days), three intervention periods (5 days each), and two washout periods (9 days each). During each intervention period, women consumed 750 mg/day of a supplement containing predominantly c9,t11-18:2, t10,c12-18:2, or 18:1 (olive oil placebo). Milk was collected by complete breast expression on the final day of each period. Infant milk consumption was estimated by 24 h weighing on the penultimate day of each intervention and washout period, and maternal adiposity (% body fat) was determined at baseline using dual energy X-ray absorptiometry. Milk c9,t11-18:2 and t10,c12-18:2 concentrations were greater ($P < 0.05$) during the corresponding CLA treatment periods as compared to the placebo period, providing strong evidence of subject compliance. Both CLA isomers were transferred into milk fat at relatively high efficiency; average transfer efficiency was estimated to be 23.3%. Compared to the placebo treatment, milk fat content was not reduced during either CLA treatment. Data indicate that body fatness did not modify any putative effect of isomeric CLA consumption on milk fat concentration. The evidence from this study suggests that the sensitivity of lactating women's mammary tissue to an anti-lipogenic effect of the t10,c12-18:2 isoform of CLA may be less than previously hypothesized.

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Supplemental conjugated linoleic acid consumption does not influence milk

macronutrient contents in all healthy lactating women

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Abstract:

The term "conjugated linoleic acid" (CLA) refers to a group of positional and geometric isomers that are derived from linoleic acid and are found primarily in meat and milk products from ruminant animals. Due to the array of putative benefits associated with various forms of CLA, there has been recent interest in supplementing human diets with these fatty acids especially when weight loss is desired. However, in many animal models, CLA has been shown to decrease milk fat production. There is some concern, therefore, that maternal CLA supplementation during lactation might inadvertently decrease nutrient supply to the nursing infant. However, there is only limited research on the effect of CLA consumption on milk fat content in women. Based on previously published work from our laboratory, we hypothesized that CLA supplementation would reduce the milk fat percentage in lactating women in a dose-dependent manner. Breastfeeding women (n = 12) were assigned randomly to treatments of 4 g/day safflower oil (SFO), 2 g/day CLA plus 2 g/day SFO, or 4 g/day CLA in a double blind, 3 x 3 Latin square design. Conjugated linoleic acid supplements contained approximately equal amounts of cis9,trans11-18:2 and trans10,cis12-18:2; the two most common isoforms of CLA. Milk was collected by complete breast expression on the last day (day 5) of each intervention period and analyzed for macronutrient and fatty acid composition. On day 4 of each intervention period, infant milk consumption was estimated by 24 h weighing of the infant. Washout periods were 9 days in length. We observed a dose-dependent increase in the concentrations of cis9,trans11-18:2 and trans10,cis12-18:2 in the milk fat. However, we detected neither a change in overall macronutrient composition nor infant milk consumption. These data do not support those obtained from animal models or our previous human work suggesting that consumption of CLA mixtures necessarily reduces milk fat. It is possible that either (1) the interpretation of our previously published data should be reevaluated, and/or (2) there are important intra- and inter-species differences in this regard.

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The combination of ascorbic acid 6-palmitate and [Fe-3(III)(mu(3)-O)](7+) as a

catalyst for the oxidation of unsaturated lipids

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Abstract:

Recently, iron 2-ethylhexanoate (Fe-eh, 1) in combination with ascorbic acid 6-palmitate (AsA6p) has been reported as a good catalytic system for the oxidation of ethyl linoleate (EL), an unsaturated lipid. In response to the fascinating chemistry of this bio-inspired iron-based catalyst the structure of Fe-eh, and the effect of AsA6p on it, have been studied. Fe-eh was found to be a trinuclear oxido-centered iron(III) cluster of general formula [Fe-3(III)(mu(3)-O)(eh)(6)(acetone)(3)](eh). The Mossbauer spectra of 1 indicate that the trinuclear iron core is not symmetric as the spectra exhibit two equivalent iron(III) sites and one unique iron(III) site. Variable temperature magnetic measurements indicate that the three iron centers are antiferromagnetically coupled.

Upon the addition of AsA6p to complex 1 a new species (2), which has not yet been completely identified, is formed. Mossbauer spectroscopy indicates, however, that 2 is a mixed-valence cluster which probably has an iron-core that differs in symmetry from 1. The reduction of 1 to 2 was also monitored in time by electrospray ionization mass spectrometry, revealing that the reduction reaction is kinetically dependent on the molar ratio AsA6p/Fe-eh. Based on these results and other available information, a general mechanism for the oxidation of EL under the effect of the combination of AsA6p/Fe-eh is proposed. (c) 2006 Elsevier B.V. All rights reserved.

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