Jie Zhang, J Glycomics Lipidomics 2016, 6:3 (Suppl)
http://dx.doi.org/10.4172/2153-0637.C1.006

Lipidomics demonstrated quality changement of chilled beef loins irradiated by electronic eradiating accelerator

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Irradiation is an important cold sterilization technique, and has been approved in the application of food field including spice, dehydrated vegetables, frozen meat and cooked meat products. However, it has been limited in the food high in fat since irradiation could induce the off-odor because of fats oxidation. With the development of high-energy electronic eradiating accelerator, it could keep the sterilization effect and inhibit the fats oxidation when compared to the conventional γ rays irradiation, especially with irradiation from the high dose rate. In the previous paper, we firstly screen effects from dose and dose rate on the physical form of irradiated chilled beef loins. In the present paper, we further investigated the lipidomics variation between control and treated by 3.0 kGy in 150 kGy/min. The results showed that there were 857 lipid compounds found in the irradiated chilled beef, which belong to sterol, fatty acids, glyceride, sphingolipid, PA, PE, PG, PS, PI and CL. There were huge differences between composition and species variation; and PC decreased by 3%, fatty acids 4%, glyceride 6%, and PE 1%. The lipidomics analysis provided the important evidence for the lipid quality changements.

Biography

Jie Zhang has completed her PhD from Northwest A&F University and Post-doctoral studies from Peking University of China. Now she works at the Institute of Food Science and Technology- Chinese Academy of Agricultural Sciences. She has published more than 16 papers and has been serving as a Reviewer for *Food Chemistry, International Journal of Food Science and Technology, and Marine Drugs*. She focuses on the mechanism and application of agriculture products processing.

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