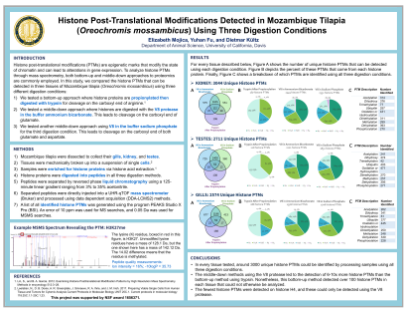
BIOCHEMISTRY AND MOLECULAR BIOLOGY

Society: Biochemistry and Molecular Biology

Session: Protein Modifications

(R3326) Histone Post-Translational Modifications Detected in Mozambique Tilapia (Oreochromis mossambicus) Using Three Digestion Conditions



Has Audio

Please join our live poster discussion on April 27th from 3:15 PM - 4:45 PM EDT

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To analyze histone post-translational modifications (PTMs) through mass spectrometry, both bottom-up and middle-down approaches to proteomics are commonly employed. In this study, we compared the histone PTMs that can be detected in Mozambique tilapia (Oreochromis mossambicus) using three different digestion conditions. First, we tested a bottom-up approach where histone proteins are propionylated then digested with trypsin for cleavage on the carboxyl end of arginine. Second, we tested a middle-down approach where histones are digested with the V8 protease in the buffer ammonium bicarbonate. This leads to cleavage on the carboxyl end of glutamate. We tested another middle-down approach using V8 in the buffer sodium phosphate for the third digestion condition. This leads to cleavage on the carboxyl end of both glutamate and aspartate. Our results indicate which histone PTMs can be identified under each digestion condition on samples of gills, kidney, and testes of Mozambique tilapia. We specify which PTMs are only detected using one method, and which are detected through multiple methods.

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