



Research article

## Mucus protein composition of wild *Channa striatus* (Bloch, 1793) (Perciformes: Channidae) from Peninsular Malaysia

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### Abstract

Several wild Snakehead fish or *Channa striatus*, with total length and weight ranging between 24-36 cm and 130-210 g were collected from paddy field at Kampung Selinsing, Perak. From Bradford assay, the total protein concentration of epidermal mucus was determined as 2.45 mg/ml. Subsequently, the samples were fractionated and further analysed by using LC-MS/MS. From UniProt/SwissProt and UniProt/TrEMBL databases, 192 and 157 proteins were identified. The foremost protein detected by UniProt/SwissProt database was keratins (21%), followed by histones (16%), 14-3-3 proteins (13%), calmodulins (11%), ras-related proteins (10%), creatine kinases (8%), actins (6%) and other proteins (15%). On the other hand, the major protein perceived from UniProt/TrEMBL database was uncharacterized proteins (43%), followed by histones (21%), 60S ribosomal (8%), actins (6%), 40S ribosomal (5%), glycolysis related proteins (5%) and other proteins (12%). Based on the types of protein, structural proteins (38%) was the main protein identified by UniProt/SwissProt database, followed by regulatory (26%), enzymatic/catalytic (14%), calcium-binding/transport (11%), ribosomal (6%) and contractile proteins (5%). Whereas, protein with unknown function (43%) was the major protein detected by UniProt/TrEMBL database. This followed by structural proteins (23%), ribosomals (13%), enzymes (6%), contractiles (6%), regulatory (4%), antioxidants (3%), and calcium-binding protein (2%). From this study, a wide range of proteins with various functions were detected within the mucus of wild *Channa striatus*, which needs further studies and exploration.