**Table 5** Assessment of the anti-microbial activity of fish muscle protein hydrolysates *in vitro*

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| **Source** | **Protease and hydrolysis conditions** | **Hydrolysate/ peptide** | **Anti-microbial activity** | **Reference** |
| Yellowfin tuna | Trypsin (incubated overnight 37◦C, enzyme/protein ratio 1:20). Pepsin (pH 2, 37 °C, 1 h, enzyme/protein ratio 1:20) + pancreatin (pH 7.5, 37 °C, 2 h, enzyme/protein ratio 1:10) | C18 digested fraction  GCB digested fraction | MIC value of 1.0 ± 0.1 mg/mL against Staphylococcus aureus  MIC value of 3.5 ± 0.1 mg/mL against Staphylococcus aureus | Cerrato et al. (2020) |
| Argentine croaker | Protamex® (pH 7.0, 50°C, enzyme/ protein ratio 30 U/g) | Argentine croaker isolate hydrolysate (DH 10-20%), Argentine croaker myofibrillar protein hydrolysate (DH 10–20%) | Inhibition zones of *Aeromonas hydrophila*, Staphylococcus aureus, *Bronchothrix thermosphacta, Listeria innocua and* *Debaryomyces hanseii* ranging from 0.25–1.50 cm at 1.25-5.00 mg/mL. | Da Rocha et al. (2018) |
| Argentine croaker | Alcalase® (pH 8.0, 50 °C, enzyme/ protein ratio 30 U/g) | Argentine croaker isolate hydrolysate (DH 10-20%), Argentine croaker myofibrillar protein hydrolysate (DH 10–20%) | Inhibition zones of *Brochothrix thermosphacta, Listeria innocua, Listeria monocytogenes, and* Staphylococcus*. aureus, Aeromonas hydrophila, Yersinia enterecolitica* and *Debaryomyces hanseii* ranging from 0.25 2.75 cm at 1.25-7.00 mg/mL. | Da Rocha et al. (2018) |
| Loach | - | Polypeptide (9800 Da) | Dose dependently increased inhibition zones in Baccilus subtilis, Escherichia coli, and Staphylococcus aureus (1-1000 μg/mL) | Dong et al. (2002) |
| Sardinelle | *Baciilus subtilis* A26 (37◦C, pH 8.0, 24h) | Whole hydrolysate | Inhibition zones in gram-positive bacteria Staphylococcus *aureus, Bacillus cereus, Enterococcus faecalis* and *Micrococcus luteus* and gram-negative bacteria Escherichia coli ranging from 10–24 mm at 200 mg/mL | Jemil et al. (2014) |
| Zebra blenny | *Baciilus subtilis* A26 (37◦C, pH 8.0, 24h) | Whole hydrolysate | Inhibition zones in gram-positive bacteria Bacillus *cereus* and gram-negative bacteria Escherichia coli ranging from 10–11 mm at 200 mg/mL | Jemil et al. (2014) |
| Goby | *Baciilus subtilis* A26 (37◦C, pH 8.0, 24h) | Whole hydrolysate | Inhibition zones in gram-positive bacteria Bacillus *cereus* and gram-negative bacteria Escherichia coli of 10 mm at 200 mg/mL | Jemil et al. (2014) |
| Ray | *Baciilus subtilis* A26 (37◦C, pH 8.0, 24h) | Whole hydrolysate | Inhibition zones in gram-positive bacteria Staphylococcus *aureus* andBacillus *cereus* and gram-negative bacteria Escherichia coli ranging from 10–13 mm at 200 mg/mL | Jemil et al. (2014) |
| Atlantic mackerel | Protamex® (40-43◦C, pH 8.0, 150 min) | Lys-Val-Glu-Ile-Val-Ala-Ile-Asn-Asp-Pro-Phe-Ile-Asp-Leu | Bacillus megaterium, Blautia coccoides, Bifidobacterium infantis, Enterococcus faecium, Enterococcus faecalis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, Vibrio parahaemolyticus(MIC values > 1.050 mM), Listeria ivanovii, L. monocytogenes (MIC values of 0.131 mM), *Lactobacillus acidophilus, Micrococcus luteus,* Bacteroides thetaiotaomicron (MIC values of 0.263 mM) | Offret et al. (2019) |
| Leatherjacket | Bromelain (pH 5.95 - 6.41, 50°C, 1% for pellet suspension (insoluble protein) and 0.5% for supernatant (water-soluble protein)), up to 10h) | Fraction | Fraction 12 had a MIC value of 4.3 mg/mL against Bacillus cereus and Staphylococcus aureus | Salampessy et al. (2010) |

DH, degree of hydrolysis; GCB, graphitized carbon black; MIC, minimum inhibition concentration.