**Table 1:** Antimicrobial activity of TTX extracts of liver, skin and muscles isolated from Puffer fish, *L. sceleratus*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tested organisms** | **Liver** **(Ẋ ± SX)1 (ZOI by (mm))2** | **Skin****(Ẋ ± SX)1 (ZOI by (mm))2** | **Muscle** **(Ẋ ± SX)1 (ZOI by (mm))2** | **Standard****(Ẋ ± SX)1 (ZOI by (mm))2** |
| **Gram Positive Bacteria** | *Lagocephalus sceleratus* | **Ampicillin** |
| *Staphylococcus aureus* | 13.83 ± 0.36 | 12.75 ± 0.26 | 11.30 ± 0.77 | 15.50 ± 0.36 |
| *Bacillus subtilis* | 17.51 ± 0.51 | 16.27 ± 0.62 | 15.28 ± 0.75 | 18.82 ± 0.42 |
| *Streptococcus agalactiae* | 12.68 ± 0.08 | 10.84 ± 0.61 | 11.44 ± 0.31 | 13.64 ± 0.23 |
| *Enterococcus faecalis* | NA**3** | 19.05 ± 0.29 | NA | 22.00 ± 0.50 |
| **Gram Negative Bacteria** | *Lagocephalus sceleratus* | **Gentamycin** |
| *Vibiro cholerae* | 9.22 ± 0.65 | 8.45 ± 0.41 | 8.08 ± 0.17 | 10.12 ± 0.32 |
| *Aeromonas veronii* | 20.49 ± 0.57 | 18.02 ± 0.64 | 19.67 ± 0.39 | 23.23 ± 0.67 |
| *Escherichia coli* | 22.24 ± 0.96 | 20.16 ± 0.31 | 19.16 ± 0.92 | 25.53 ± 0.53 |
| *Proteus vulgaris* | NA | NA | 5.74 ± 0.46 | 8.95 ± 0.63 |
| *Salmonella typhi* | 12.06 ± 0.76 | NA | 12.68 ± 0.08 | 14.23 ± 0.64 |
| *Shigella dysenteriae* | NA | NA | NA | NA |
| **Fungi** | *Lagocephalus sceleratus* | **fluconazole** |
| *Candida albicans* | 12.5 ± 1.30 | 13.17 ± 0.47 | 10.66 ± 0.60 | 16.99 ± 0.48 |
| *Aspergillus fumigatus* | 19.21 ± 0.59 | 17.11 ± 0.85 | 16.27 ± 0.67 | 21.74 ± 0.60 |
| *Trichophyton rubrum* | NA | 5.33 ± 0.52 | 6.21 ± 0.89 | 9.85 ± 0.38 |

**(1) Ẋ ± SX: Mean ± standard deviation. (2)** **ZOI by (mm): Zone Of Inhibition measured by mile meter. (3)NA: No Activity.**

**Table 2:** Seasonal TTX levels in different tissues isolated from Puffer fish, *L. sceleratus* (µg/g) using LC/MS/MS.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Season** | **Sex** | **Liver (Ẋ ± SX)1** | **Skin (Ẋ ± SX)1** | **Muscle (Ẋ ± SX)1** |
| **Winter** | Male | 25.37 ± 0.49 | 1.64 ± 0.23 | 0.77 ± 0.27 |
| Female | 30.33 ± 0.56 | 3.38 ± 0.45 | 2.26 ± 0.45 |
| **Summer** | Male | 4.04 ± 0.74 | 0.35 ± 0.12 | 0.66 ± 0.27 |
| Female | 21.04 ± 0.49 | 1.60 ± 0.28 | 1.10 ± 0.31 |

**(1) Ẋ ± SX: Mean ± standard deviation.**