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ASSESSING 165 EMERGING CONTAMINANTS IN WATER, SEDIMENTS AND FISH THROUGH LC-MS/MS TARGET SCREENING APPROACH

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INTRODUCTION

Artisanal fisheries play a crucial role in sustaining the livelihoods of coastal communities by providing food security and nutrition.

However, anthropic activities that impact coastal ecosystems can have detrimental effects on both fishing practices and the well-being of the population reliant on fish from these areas.

Therefore, this study aimed to identify contaminants of emerging concern (CECs) in fish (n = 22), water (n = 27), and sediment samples (n = 27) collected in the Lagoa da Conceição region in Florianópolis, Santa Catarina - Brazil.

METHODOLOGY

1. Solid-phase extraction
2. Pressurized liquid extraction
3. ultrasound assisted extraction
4.

Target screening was performed using iquid chromatography coupled to mass spectrometry (LC MS/MS). The MS parameters and the classification of the evaluated analytes are presented in the QR code.

RESULTS

Qualitative

Sulfamethoxazole		Mefenamic acid
Diclofenac	Sertraline	Benzoylecgonine
Cannabidiol	Timethoprim	Azithromycin
Caffeine	Nitrazepam	Piroxicam
Bezafibrate	Cocaine	Codeine
Nimesulide	Azeperol	Clindamycin
Ketamine	Metoprolol	Bisoprolol
Azeperone	Flunitrazepam	Temazepam
Clonazepam	Lincomycin	Propranolol
Tramadol	Diethylpropion	okadaic acid
Morphine	Prednisolone	Alprazolam
Ciprofloxacin	Erythromycin	Methylphenidate

Quantitative

µg/L

LEvap point showed the highest incidence of CECs in the water (23 occurrences)

Clindamycin	Caffeine	Ciprofloxacin
< LOQ	< LOQ	< LOQ - 5.88
Trimethoprim		Sulfamethoxazole
< LOQ		< LOQ

Quantitative

µg/Kg

	Diclofenac	Acetaminophen
	< LOQ - 23.77	< LOQ - 3.02
Caffeine	Clindamycin	Ciprofloxacin
2 - 55.89	< LOQ - 9.99	< LOQ - 7.54

Quantitative

µg/Kg

	Nitrazepam (15/22)	Diclofenac (21/22)
Ciprofloxacin 2.94 - 4.18		Sertraline < LOQ (22/22)

CONCLUSION

The screening method used was considered satisfactory, as in addition to confirming the presence of CECs, it allowed observing their occurrence in different environmental matrices.

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