



^a Marine Biodiscovery, School of Chemistry and Ryan Institute, National University of Ireland Galway, University Road, H91 TK33 Galway, Ireland

^b Escuela Superior Politécnica del Litoral, ESPOL, Centro Nacional de Acuicultura e Investigaciones Marinas, CENAIM, Campus Gustavo Galindo Km 30.5 Vía Perimetral, P.O. Box 09-01-5863, Guayaquil, Ecuador.

^c Zoology, School of Natural Sciences and Ryan Institute, National University of Ireland Galway, University Road, H91 TK33 Galway, Ireland

^d Équipe C-TAC, COMETE UMR 8638 CNRS, Université Paris Descartes, 4 avenue de l'observatoire, 75006 Paris, France
E-mail: p.guillenmena1@nuigalway.ie

INTRODUCTION

Antipathozoanthus hickmani, one of the most representative zoantharians from the Tropical Eastern Pacific, has been described from the coast of Ecuador and no chemical studies have been reported from any specie of the genus *Antipathozoanthus* so far. Herein, we report the isolation and identification of four new ecdysteroids derivatives named ecdysonelactones A-D featuring a lactone ring fused to ring A of the ecdysteroid structure and four novel halogenated dipeptides named valdiviamides A-D, containing bromine and iodine atoms in their structures.

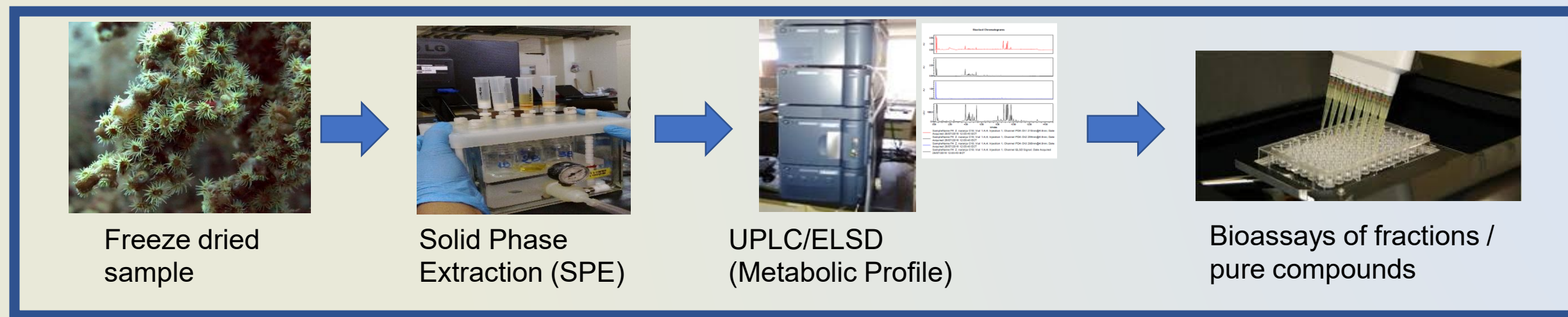
OBJECTIVES

- Investigate the chemical diversity of one of the most common zoantharians from the Tropical Eastern Pacific
- Undertake the first chemical study of a specie of the genus *Antipathozoanthus* to give insights some chemical markers for this genus
- Identify novel compounds with potential biological activity

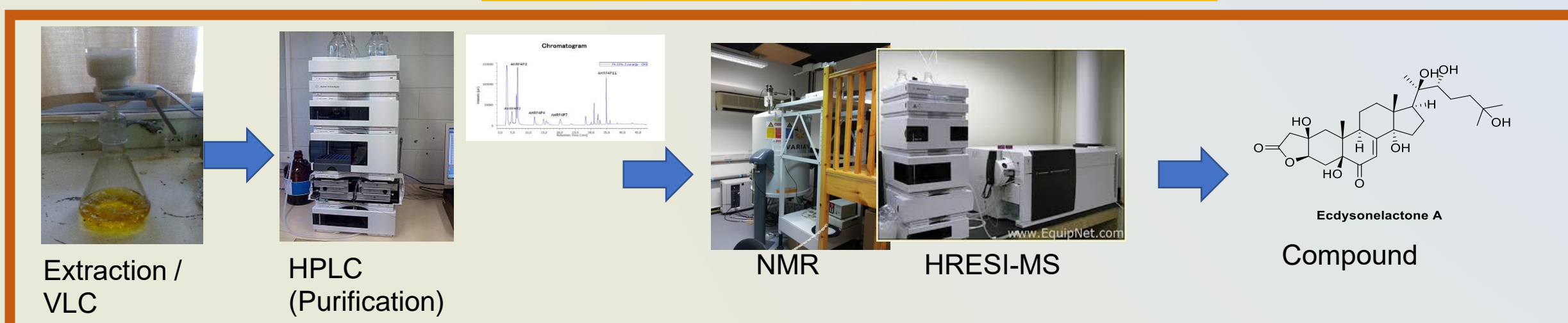


METHODOLOGY

Screening



Natural product chemistry



Antipathozoanthus hickmani
(73.8 g)

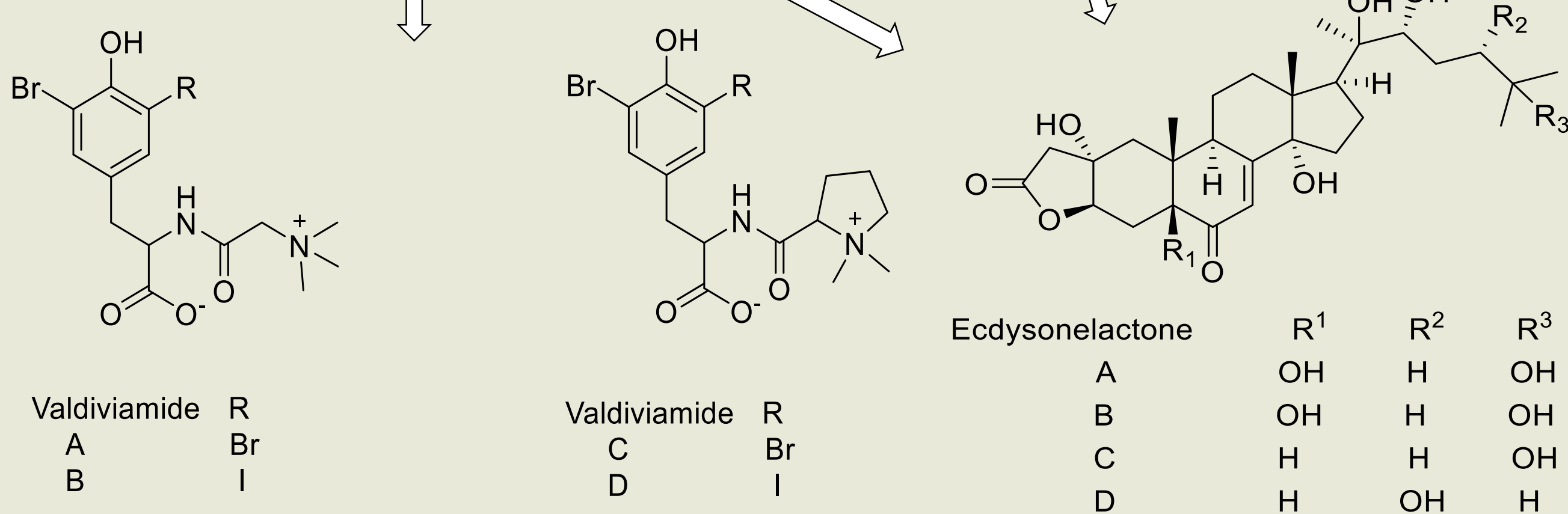
VLC

F3

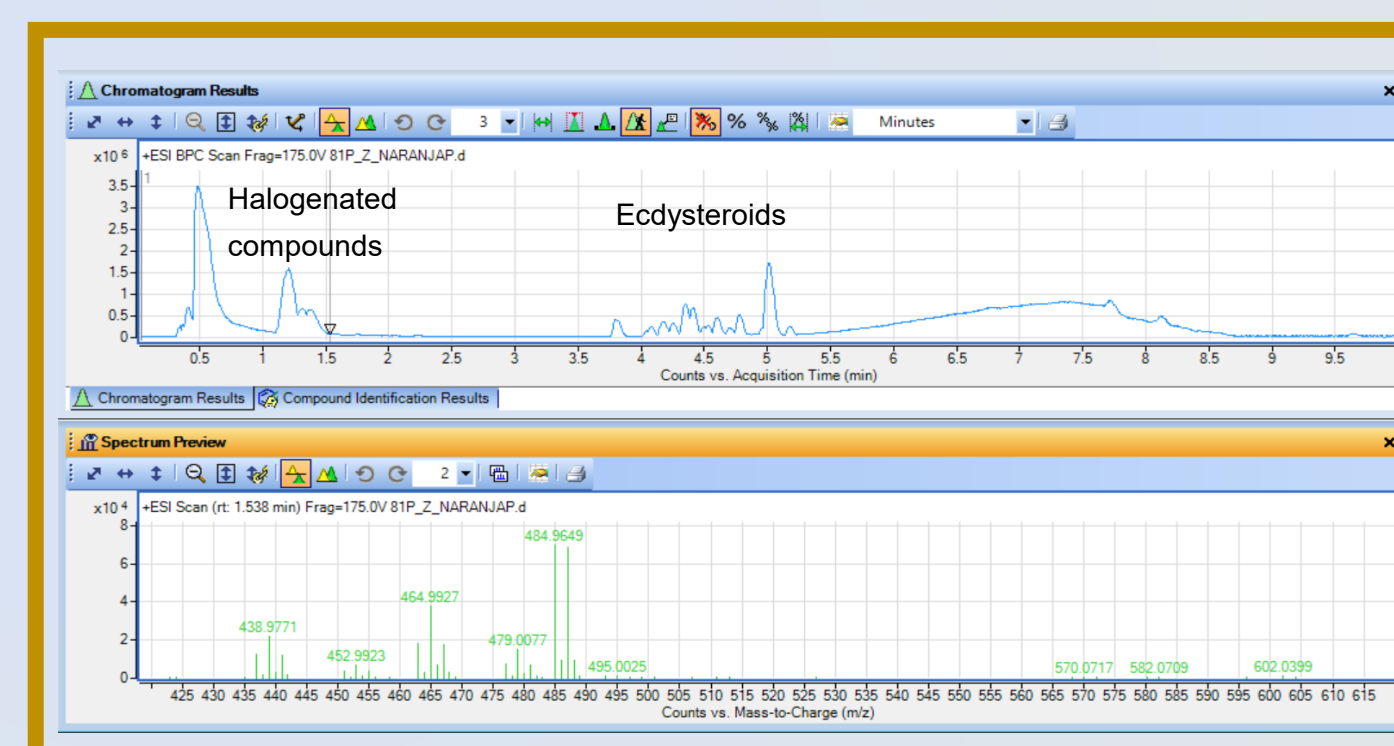
F4

F1: H₂O
F2: H₂O:MeOH 1:1
F3: H₂O:MeOH 1:3
F4: MeOH
F5: MeOH:DCM 3:1
F6: MeOH:DCM 1:1
F7: DCM

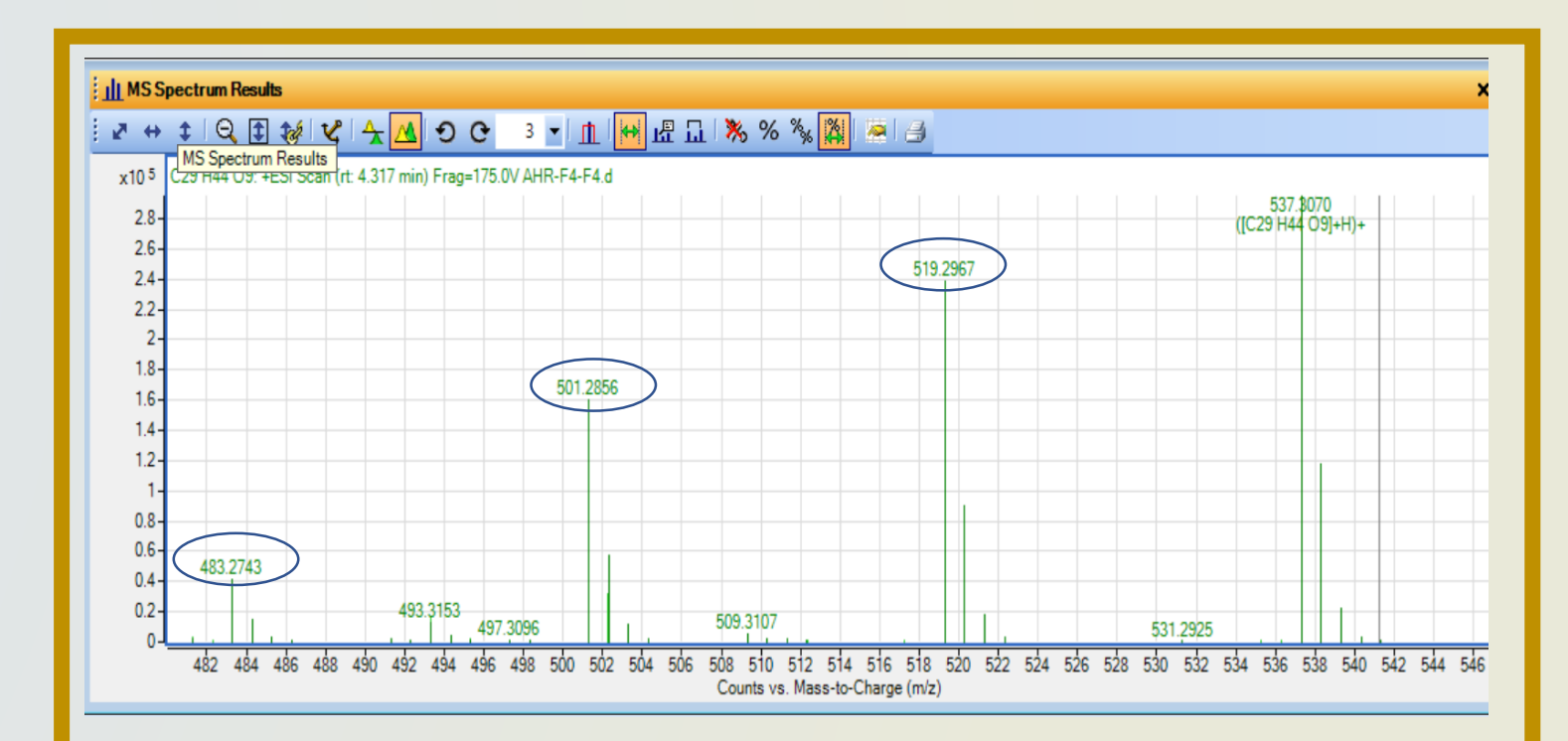
Isolation of compounds were obtained using a semi-prep HPLC C18 column (Restek, 10 y 250 mm, 5 μm)



RESULTS



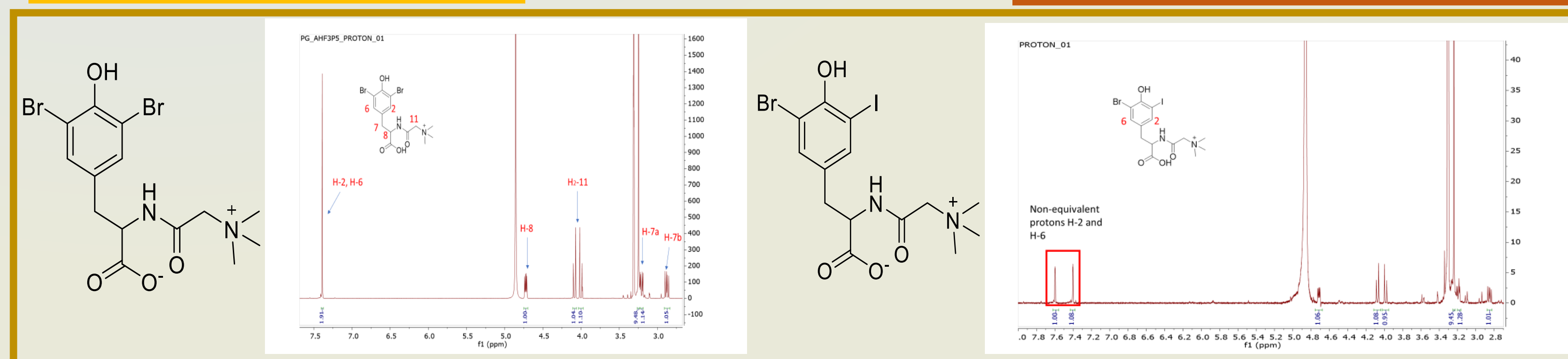
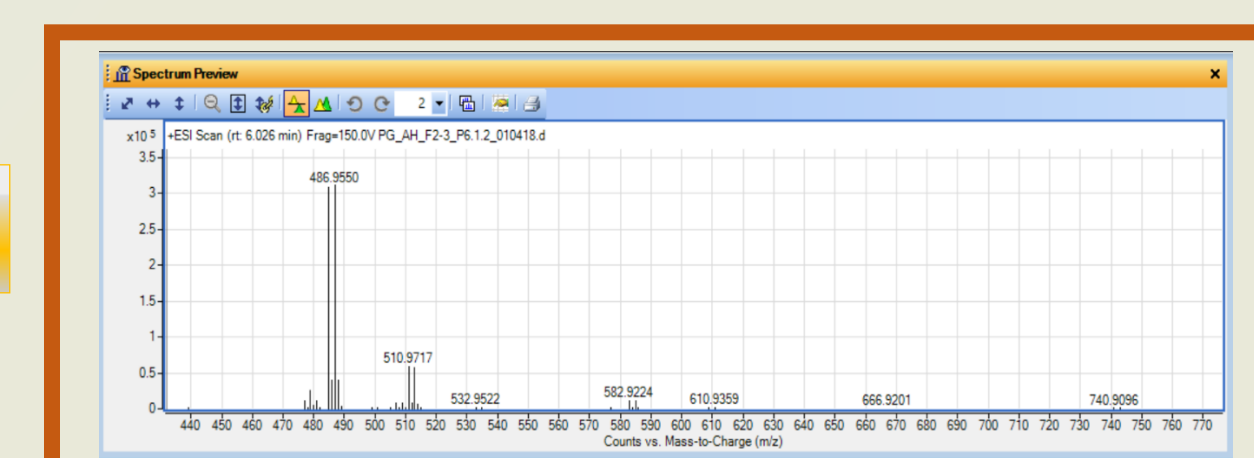
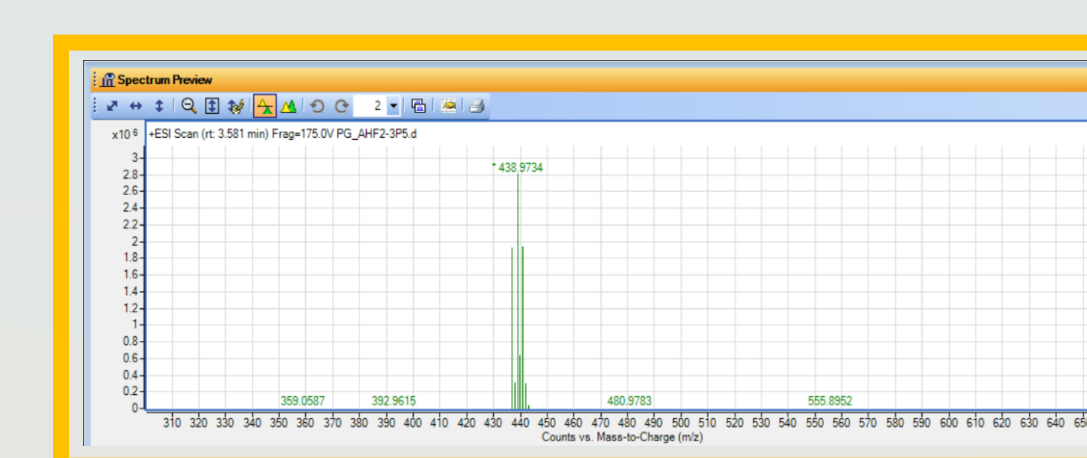
Methanolic fraction of *A. hickmani*



Fragmentation pattern of ecdysonelactone A

- Methanolic fraction of *A. hickmani* containing halogenated compounds and ecdysteroids (ecdysonelactones)
- Fragmentation pattern of the molecule (ecdysonelactones) indicates the loss of at least three molecules of water.
- Ecdysonelactones isolated at λ 254 nm.
- Valdiviamides A-D isolated at λ 210 nm

VALDIVIAMIDES A-D



DISCUSSION AND CONCLUSION

- This is the first chemical study of the Tropical Eastern Pacific Zoantharian *A. hickmani*
- Two different families of compounds; four ecdysteroids derivatives (ecdysonelactones A-D) and four halogenated dipeptides (valdiviamides A-D) have been identified.
- Valdiviamides A-D represent the first report of halogenated compounds from a specie of the genus *Antipathozoanthus* and the third one from zoantharians.
- A. hickmani* represents an interesting source or novel metabolites and further studies on other species of *Antipathozoanthus* should be carried out.
- No representative bioactivity was found in ecdysonelactones but further biological screening will be carried out with valdiviamides as halogenated compounds especially bromotyrosine derivatives have shown promising bioactivity.

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References: 1. Guillen, P. O.; Calabro, K.; Jaramillo, K. B.; Dominguez, C.; Genta-Jouve, G.; Rodriguez, J.; Thomas, O. P. Ecdysonelactones, Ecdysteroids from the Tropical Eastern Pacific Zoantharian *Antipathozoanthus Hickmani*. *Mar. Drugs* 2018, 16 (2), 2–11; El-Demerdash, A.; Moriou, C.; Toulec, J.; Besson, M.; Soulet, S.; Schmitt, N.; Petek, S.; Lecchini, D.; Debitus, C.; Al-Mourabit, A. Bioactive Bromotyrosine-Derived Alkaloids from the Polynesian Sponge *Suberea lanthelliformis*. *Mar. Drugs* 2018, 16(5), 1-16.