**Nathalie Bourgougnon, Director of Laboratory of Marine Biotechnology and Chemistry**

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**Grade:** Professor Section CNU Cl ex 1: CNU 66 physiology

**Assignment Institution**: University South Brittany

Laboratory of Marine Biotechnology and Chemistry

Doctoral School: Doctoral School in Marine and Coastal Sciences

**Qualifications**

1994 PhD: Faculty of Pharmacy, University of Nantes, Institute of Research on the Substances and Organizations of the Sea (ISOMer) under the direction of Professor Jean-Michel Kornprobst: *Antiviral activity and antiproliferative of the sulphated polysaccharide of Schizymenia dubyi (Rhodophytes, Gigartinales),*

2000 Habilitated to supervise PhD students (HDR) in Marine Biology ″Marine Substances with biological activities″, University of La Rochelle.

**Scientific skills**

* Phycology and physiology of seaweeds cell wall: extraction, characterization of seaweeds cell wall, analysis of biochemical composition
* Marine Seaweed Biotechnology and biochemistry: extraction and purification of biological compounds by eco-friendly processes (EAE…)
* Evaluation of biological activities: antiviral, antifouling, antibacterial activities *in vitro*

**Teaching activities**

Plant et Physiology Biology, Plant and Marine Biotechnology from the licence to the master level.

**Examples of scientific production**

Abdul Malik S.A., Bedoux G., Garcia Maldonado J.Q., Freile-Pelegrín Y., Robledo D., Bourgougnon N. 2020. Chapter 10 : Defense on surface: macroalgae and their surface-associated microbiome. Seaweeds Around the World: State of Art and Perspectives. Advances Botanical research, Volume 95. ISBN: 978-0-08-102710-3.

Terme N., Hardouin K., Pliego Cortès H., Peñuela A., Freile-Pelegrín Y., Robledo D., Bedoux G., Bourgougnon N. 2020. Chapter 25: Emerging Seaweed Extraction Techniques: Enzyme-assisted Extraction a key step of seaweed biorefinery? Sustainable Seaweed Technologies – a new volume in the ‘Advances in Green and Sustainable Chemistry’ series, Elsevier. ISBN: 978-0-12-817943-7.

Stiger-Pouvreau V, Bourgougnon N, Deslandes E. (2016) Chapitre Eight Carbohydrates from seaweeds. In: Seaweed in Health and Disease Prevention, Fleurence J, Levine I (Eds). Elsevier. eBook ISBN: 9780128027936

Bedoux G., Bourgougnon N. 2015. Bioactivity of secondary metabolites from macroalgae. Cellular Origins, Life in Extreme Habitats and Astrobiology. Editors Sahoo D. & Seckbach J. - Ed. Springer. ISSN: 1566-0400

Magdugo R.P., Terme N., Lang M.,Pliego-Cortés H., Marty C., Hurtado A.Q., Bedoux G. and Bourgougnon N. (2020). An Analysis of the Nutritional and Health Values of *Caulerpa racemosa* (Forsskål) and *Ulva fasciata* (Delile)—two Chlorophyta collected from the Philippines. Molecules, acceptée pour publication

Abdul Malik S.A., Bedoux G., Robledo D., Garcia Maldonado J.Q., Freile-Pelegrín Y., Bourgougnon N. 2020. Chemical defence by allelopathic active metabolites of *Halymenia floresii* (Rhodophyta) against biofouling. Journal Applied in Phycology, 10.1007/s10811-020-02094-4

Fournière M., LatireT., Lang M., Terme N., Bourgougnon N., Bedoux G. 2019. Production of Active Poly- and Oligosaccharidic Fractions from *Ulva* sp. by Combining Enzyme-Assisted Extraction (EAE) and Depolymerization. Metabolites 9 (9), 182-205.

Pliego-Cortés H., Bedoux G., Boulho R., Freile-Pelegrín Y., Bourgougnon N., Robledo D. 2019. Stress tolerance and photoadaptation to solar radiation in Rhodymenia pseudopalmata (Rhodophyta) through mycosporine-like amino acids, phenolic compounds, and pigments in an Integrated Multi-Tropic Aquaculture system. Algal Research41, 101542.

Peñuela A., Robledo D., Bourgougnon N., Bedoux G., Hernandez E., Freile-Pelegrín Y. 2018. Environmentally Friendly Valorization of *Solieria filiformis* (Gigartinales, Rhodophyta) from IMTA using a Biorefinery Concept. Marine drugs 16, 487-497

Kevin Hardouin Gilles Bedoux, Anne-Sophie Burlot, Claire Donnay-Moreno, Jean-Pascal Bergé, Pi Nyvall-Collén, Nathalie Bourgougnon 2016. Enzyme-assisted extraction (EAE) for the production of antiviral and antioxidant extracts from the green seaweed *Ulva armoricana* (Ulvales, Ulvophyceae). Algal Research 233–239

Burlot Anne-Sophie, Bedoux Gilles and Bourgougnon Nathalie (2016). Response Surface Methodology for Enzyme-Assisted Extraction of Water-Soluble Antiviral Compounds from the Proliferative Macroalga *Solieria chordalis*. Enzyme Engineering. 5:2 DOI: 10.4172/2329-6674.1000148

Romain Boulho, Christel Marty, Yolanda Freile-Pelegrín, Daniel Robledo, Nathalie Bourgougnon and Gilles Bedoux (2018). Antiherpetic (HSV-1) activity of carrageenans from the red seaweed *Solieria chordalis* (Rhodophyta, Gigartinales) extracted by Microwave Assisted Extraction (MAE) Journal Applied Phycology, 1-10

Romain Boulho, Julie Le Roux, Céline Le Quémener, Grégoire Audo, Nathalie Bourgougnon and Gilles Bedoux. 2017 Isolation of anti-UVB and antioxidant compounds from *Solieria chordalis* by using Centrifugal Partition Chromatography. Phytochemistry Letters. https://doi.org/10.1016/j.phytol.2017.03.010

Isuru Wijesekara, Marie Lang, Christel Marty, Marin-Pierre Gemin; Romain Boulho, Philippe Douzenel Gilles Bedoux, Nathalie Bourgougnon 2017. Different extraction procedures and analysis of protein from *Ulva* sp. in Brittany, France. Journal Applied Phycology, 1-9

Kevin Hardouin, Gilles Bedoux, Anne-Sophie Burlot, Pi Nyvall-Collen, Nathalie Bourgougnon (2014). Enzymatic recovery of metabolites from seaweeds: potential applications. *Advance Botanical research,* Volume 71, Pages 279-320.

Bouhlal R, Haslin C, Chermann JC, Colliec-Jouault S, Sinquin C, Simon G, Cerantola S, Riadi H, and Bourgougnon N. (2011). Antiviral activities of sulfated polysaccharides isolated from *Sphaerococcus coronopifolius* (*Rhodophytha*, *Gigartinales*) and *Boergeseniella* *thuyoides* (*Rhodophyta*, *Ceramiales*). *Marine Drugs* 7, 1187-1209.

Bazes, A. Silkina, D. Defer, E. Quéméner, JP Braud, and N. Bourgougnon (2006). Allelopathic substances from *Ceramium botryocarpum* used as antifouling products. *Aquaculture*, 258, 664-674.

C. Olicard, T. Renault, C. Torhy, A. Benmansour and N. Bourgougnon(2005). Putative antiviral activity in haemolymph from adult Pacific oysters, *Crassostrea gigas*. *Antiviral research*, 66, 147-152.