



<b>Module Title</b>	<b>Bioactive Food Ingredients</b>
<b>Module Code</b>	MCLs345
<b>Module</b>	FNH-5
<b>Degree Program</b>	Master of Science in Life Sciences (MSLS)
<b>ECTS Credits</b>	5
<b>Workload</b>	150 h: Contact 71 h; Self-study 79 h
<b>Module Coordinator</b>	<p><b>Name</b> Wilfried Andlauer</p> <p><b>Phone</b> 027 606 86 37</p> <p><b>Email</b> Wilfried.andlauer@hevs.ch</p> <p><b>Address</b> HES-SO Valais-Wallis, School of Engineering, Institute of Life Technologies, Route du Rawyl 47, 1950 Sion</p>
<b>Lecturers</b>	<ul style="list-style-type: none"> <li>• Dr. Agnieszka Kosinska Cagnazzo</li> <li>• Guest lecturers</li> </ul>
<b>Entry Requirements</b>	Knowledge of the principles of food chemistry as well as human nutrition and metabolism.
<b>Learning Outcomes and Competencies</b>	<p>After completing the module, students will be able to:</p> <ul style="list-style-type: none"> <li>• understand the multidisciplinary factors that influence the bioavailability and bioactivity of food ingredients;</li> <li>• understand the principles and techniques used in the identification, quantification and evaluation of biological activities of food ingredients;</li> <li>• understand the relationship between dietary phytochemicals and disease prevention;</li> <li>• critically read, analyse and discuss the scientific literature.</li> </ul>
<b>Module Content</b>	<p>The module provides a critical review on chemistry, analyses, bioavailability, and health benefits of bioactive food components:</p> <ul style="list-style-type: none"> <li>• Introduction to the background, definitions and classification of functional food</li> <li>• Presentation of the nature, sources and biological functions of food bioactive compounds – including carbohydrates, proteins and lipids – and phytochemicals, such as phenolic compounds, carotenoids and phytosterols</li> <li>• An overview of analytical approaches and techniques to identify food bioactive compounds</li> <li>• An insight into bioaccessibility and bioavailability, and their mechanisms of action.</li> </ul>
<b>Teaching and Learning Methods</b>	<ul style="list-style-type: none"> <li>• Lectures and seminars with presentations by students</li> <li>• Individual and group exercises</li> <li>• Discussions on current trends in functional food</li> </ul>
<b>Assessment of Learning Outcomes</b>	<ul style="list-style-type: none"> <li>• Oral presentation</li> </ul>

<b>Bibliography</b>	<ul style="list-style-type: none"><li>• Aluko RE, 2012. Functional foods and nutraceuticals. Springer, New York</li><li>• Belitz H-D, Grosch W, Schieberle P, 2009. Food chemistry (4th revision and extended edition). Springer, Berlin</li><li>• Gropper SS, 2017. Advanced nutrition and human metabolism (7th edition). Cengage Learning, Belmont OH, USA</li><li>• Higdon J, Drake VJ, 2013. An evidence-based approach to phytochemicals and other dietary factors (2nd edition). Thieme, New York</li></ul>
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## MSLS\_FNH-05 – Bioactive Food Ingredients

	<ul style="list-style-type: none"><li>• Nelson DL, Cox MM, Lehninger AL, 2008. Lehninger principles of biochemistry (5th ed., [various printing]). W.H. Freeman, New York.</li><li>• Wildman RE, 2007. Handbook of nutraceuticals and functional foods (2nd ed.). Taylor &amp; Francis, Boca Raton, FL, 541 S.</li><li>• Selected research articles on functional food ingredients will be posted on the moodle platform.</li></ul>
<b>Language</b>	English
<b>Last Update</b>	29.02.2024 / Wilfried Andlauer