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UE 3.4. Fundamental and methodological concepts for analysis in Biology and Health Science

3ECTS

Shared teaching

Pathophysiology upgrading

Educational team: Kadiombo Bantubungi-Blum, Julien Chapuis, Martine Duterque, Jérôme Kluza, Sabrina Marion, Ghaffar Muharram, Olivier Pluquet, Benoit Pourcet, Ariane Sharif, Didier Vieau

Contact: didier.vieau@univ-lille.fr

Summary

This teaching subunit presents the bases and recent advances in cellular and inter-organ communication as well as the main mechanisms involved in cellular plasticity and adaptation to environmental changes in physiological situations. The mechanisms leading to pathological situations such as cancer, diabetes and cardiovascular diseases as well as neurodegenerative diseases and neurological and psychiatric disorders will also be addressed.

Block of Skills and Knowledge -BCC 3: Develop and implement an experimental approach in Biology and Health

Skills acquired (direct / indirect):

- Implement an experimental approach in Biology and Health Sciences (SB3): by knowing the limits of validity of a model and by identifying potential sources of error; by arguing choices in relation to the techniques used;
- Analyze collected data in a basic, clinical or pharmacological research study (SB4): by selecting the appropriate tools for the analysis; by exploiting, reviewing and contextualizing experimental data and by making a critical analysis according to the standards of the field, respecting the principles of scientific integrity; by validating a model by comparing assumptions with experimental results; by assessing the limits of validity of a model and identifying the sources of error.

Short Program:

- Cellular and inter-organ communication mechanisms in physiological situations
- Inflammatory mechanisms in pathophysiological situations
- Pathophysiological mechanisms and cancer
- Pathophysiological mechanisms: diabetes, obesity and cardiovascular diseases
- Pathophysiological mechanisms: neurodegenerative diseases and neurological and psychiatric disorders

Test: written test