



Universiteit
Leiden
The Netherlands

Exploring the Ub/UBL landscape with activity-based probes

Witting, K.F.

Citation

Witting, K. F. (2020, May 20). *Exploring the Ub/UBL landscape with activity-based probes*. Retrieved from <https://hdl.handle.net/1887/90130>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/90130>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/90130> holds various files of this Leiden University dissertation.

Author: Witting, K.F.

Title: Exploring the Ub/UBL landscape with activity-based probes

Issue Date: 2020-05-20

Stellingen

1. Site-specific introduction of unnatural amino acids during protein translation to mimic post-translational modifications is not trivial. It requires to go against Nature's original design. (*this thesis*)
2. A post-translational modification such as ubiquitination is much more than just a mark for degradation—it's a complex signaling language that determines virtually all aspects of cellular function and homeostasis. (*this thesis*)
3. Probing dynamic post-translational modifications is a challenging undertaking. Not only are these modifications temporally and spatially altered, but also react to changes in the proteome itself and the transcriptome. (*this thesis*)
4. Ribosomes are complex and adaptive to cellular protein synthesis demands. Decoration of the large ribosomal subunit in a critical position allows different biological outcomes. (*this thesis*)
5. Ribosomal proteins have more functions beyond protein synthesis—they orchestrate a complex choreography regulating ribosomal function and thus cellular homeostasis.
6. The plasticity of the proteome is an adaptation to changes in the cellular environment. (adapted from Kim *et al.*, 2011, *Molecular Cell*, p. 325).
7. Deeper understanding of cell biology often necessitates the use of chemistry by enabling the visualization and manipulation of cellular processes.
8. Low abundance of a protein or a post-translational modification does not mean that it is insignificant—usually these proteins are highly specialized and expand the depth of biological insights immensely.
9. Dissecting the differences between similar studies should inspire other studies that illustrate the context-dependent subtleties of cellular processes.
10. Observation and accurate measurement of a scientific phenomenon is a conundrum—manipulation of one factor in a biological system will lead to inevitable manipulation of another related factor. Thus, the “truth” depends entirely on the observer. (adapted from Erwin Schrödinger's and Eugene Wigner's thought experiments)
11. Groundbreaking scientific insights are only gained when brilliant minds share the same vision, collaborate, and remain engaged.