SPACES (Specific Probe-Associated Cellular Systems): *"Illuminating cell biology with natural fluorophores"*

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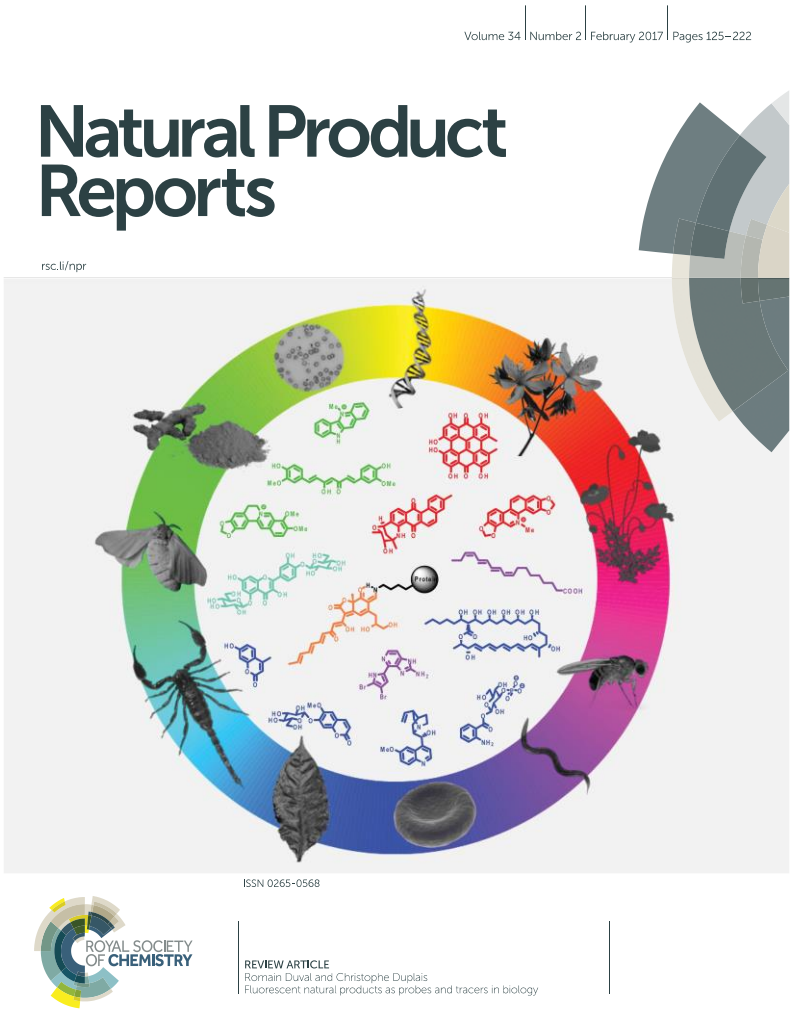
Natural fluorophores (NFs) present with a remarkable diversity (> 300 known) and are often bio-selective (cell type, disease phenotype, over-expressed protein etc.) as juxtaposing spectral and pharmacological properties. Their use as research tools remains however limited despite a real scientific relevance and high valorization potential (Duval et al., *Nat. Prod. Rep*. 2017; Colucci-Guyon et al, *Chem. Sci*. 2019). The SPACES project is built on a French-Ghanean consortium constituted of chemists (« producers, analysts ») and biologists (« imagers, profilers ») to screen a selection of NFs by High Content Imaging at the level of dedicated imaging services in France and Ghana. The objective is to identify the most relevant and specific NF-biological system associations for further study and valorization on a case-by-case basis. The NFs will be extensively screened by confocal imaging using relevant models (e. g., agressive cancer lines, virulent African pathogens, zebrafish transgenic and mutant strains etc.) to identify valuable fluo-tracer candidates. The Institut Pasteur team will lead the *in vivo* zebrafish screening task.



Fluorescence is a remarkable property of many natural products in addition to their medicinal and biological value. These peculiar secondary metabolites hold great potential as original fluorescent tracers, endowed with unique photophysical properties and with applications in most fields of biology (Duval et al., *Nat. Prod. Rep*. 2017).