



DEVELOPMENT AND APPLICATION OF GENETICALLY ENCODED SENSORS

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GFP-like fluorescent proteins led to a revolution on bioimaging by allowing researchers to visualize a wide range of biological processes in cellular and animal models. Over the last decades, the combination of these proteins with different sensory domains extended their application to real-time monitoring of molecules such as ions, cellular metabolites and neurotransmitters. A major advantage of these type of sensors is their adaptability to different applications, and the possibility of controlling their expression both spatially and temporarily.

One of the most successful examples involve the sensors for monitoring calcium in the intracellular space, where this ion has a fundamental role as a second messenger. Recently, in our group we develop the first genetically encoded calcium biosensor designed specifically for the interstitial space, allowing the study its role as first messenger, for maintaining the structure of the extracellular matrix and as an extracellular source for cytosolic signaling. Using this work as a platform, different key considerations for the design and application of similar tools will be discussed, as well as the innovations that will arise in the next years.



Hosted by: **Albert Giralt**
and **Daniel del Toro**

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at 12:00h



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