HYBRiBODY
by Hybrigenics Services

SEMINAR:

"In vitro selection & validation of synthetic single-domain antibodies"

Antibodies expended as the biochemical tools of choice to label antigens in cells or tissues. Over the past 20 years, recombinant methods have been developed to quickly select and improve monoclonal antibodies from highly diverse libraries.

VH and VL can be fused together using a synthetic linker and produced as a single protein in the form of a single chain Fv (scFv). Easier to manipulate, they can be produced in several bacteria or eukaryote cell types, fused to various tags or functional domains. Interestingly, antibodies called HCAb in *Camelidae* has an antigen recognition part composed of only a VH domain. Camelid natural single domain VH, referred to as VHH or nanobodies, can be expressed as recombinant fragments and represent attractive alternatives over classical antibody fragments like scFvs because they are easy to manipulate and they are not limited by potential misfolding of the two domains.

Recombinant antibody fragments allowed not only to accelerate the identification of unique binders, but also the development of a novel type of tool: in this case, the antibodies are directly expressed in living cells as intracellular antibodies (intrabodies), to trace or perturb endogenous target at the protein level.

We create a non-immune recombinant antibody library of high diversity, based on a nanobody scaffold that would enable efficient in vitro antibody selection against virtually any antigen. Such a library should provide antibodies usable in conventional immune assays and be enriched in antibodies active in the intracellular environment. We will show how we can use this library for antibody selection and validation against soluble and cell surface antigen with application from Immunofluorescence microscopy, FACS, super resolution or video microscopy.

Moutel S, Bery N, Bernard V, Keller L, Lemesre E, de Marco A, Ligat L, Rain JC, Favre G, Olichon A, Perez F. NaLi-H1: A universal synthetic library of humanized nanobodies providing highly functional antibodies and intrabodies. Elife. 2016 Jul 19;5.

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EPIGENETICS
CHRONIC DISEASES
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Dr. J-C RAIN,
Director of Technology Development

SAVE THE DATE:

June 26th, 2018

11:00 am

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