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High affinity anti-internalin B VHH antibody fragments isolated from naturally and artificially immunized repertoires

Mehdi Arbabi

National Research Council, Canada

The need for rapid and easy technologies for the detection of food-borne and environmental pathogens is essential for safeguarding the health of populations. Furthermore, distribution of tainted food and water can have consequences which can affect whole economies. Antibodies and antibody fragments have been historically used in detection platforms due to their antigen specificity and robust physicochemical properties. In this study, we report the isolation and characterization of antibody fragments from the immunized and non-immunized heavy chain antibody repertoire (VHH) of *Camelidae* which bind with specificity and high affinity to the *Listeria monocytogenes* invasin, Internalin B (InlB). To the best of our knowledge, this is the first report of anti-InlB VHHs from camelids. These anti-InlB VHHs were not cross-reactive to the structurally-related *Listeria* invasin Internalin A (InlA) and are potential reagents to be used in the development of detection and medical technologies.

Mehdi.ArbabiGhahroudi@nrc-cnrc.gc.ca

Tumor directed immune modulatory mono and bi-specific antibodies

Christina Furebring

Alligator Bioscience, Sweden

Alligator Bioscience has developed a fully human agonistic CD40 antibody, ADC-1013, optimized for tumor directed immunotherapy by increasing potency and tumor retention. A multicenter phase I study evaluating intratumoral administration of ADC-1013 will be initiated early 2015. Further, Alligator Bioscience's concept for generating next generation bi-specific immune modulatory antibodies for tumor directed immune activation will also be presented. In order to establish safe and effective immunotherapy, also for earlier stages of cancer and to enable combination of immune modulatory drugs, it will be essential not only to increase the response rate but also to decrease toxicity. Alligator Bioscience's strategy to develop tumor directed mono and bi-specific immune modulators, thereby optimizing the effect and minimizing immune related adverse events, will be presented. This presentation will help understanding how administration route and other approaches to direct the immune response towards the tumor can be obtained with mono and bispecific antibodies.

chf@alligatorbioscience.com