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The road from discovery to therapy through the use of antibodies

Jan Voskuil
Everest Biotech Ltd., UK

Any reagent specific to a particular protein will owe its success to a series of quality assurances ranging from quality of biological samples, the reagent's validation, validated statistic methods and analysis and clinical end point. Alternatives to antibodies, like aptamers and antibody-derived recombinant molecules, have come to light. However, together with monoclonal antibodies the screening to find the right reagent is expensive and time consuming and the epitope the reagent binds to needs to be identified afterwards. Problems regarding specificity are not necessarily solved by the switch from monoclonal antibody to such alternatives. Although the demand of having unlimited access to the exact same reagent will be best met once no longer dependent on hybridomas and animals, until this moment arrives, limiting access to fit-for-purpose monoclonal antibodies slows down medical progress. Then using peptide-specific polyclonal antibodies becomes a short-term option. Such reagents are being designed by the choice of the epitope as unique for the species or tissue type upfront without having to concern about cross-reactivity of the reagent. Yet, full reagent validation in the required platform remains compulsory, and depending on the type of application, the correct dilution needs to be determined for minimal non-specific background. In the next decade, more and more aptamers and recombinant antibody derivatives will be used as an alternative to monoclonal antibodies but before then the peptide-generated polyclonal antibodies will be used more often while the troublesome other types of polyclonal antibodies are avoided.

Biography

Jan Voskuil is a Molecular cell biologist, completed his PhD in Amsterdam (NL), and he had Post-doc positions at Stanford (US), and at Oxford (UK). He switched from academia to industry through a leading position at the CNS drug discovery company Synaptica. He subsequently gained experience in GLP-regulatory environments at CROs in Oxfordshire and Cambridgeshire (UK). Thanks to his combined academic and commercial background together with his technical and people skills, as the Chief Scientific Officer he has put Everest Biotech (UK) on the global map with the highest quality standard. Its antibodies are increasingly recognized as alternatives to unfit monoclonal antibodies.

voskuil@everestbiotech.com

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