Abnova Camelid Single Domain Ab (Nanobody) Custom Service

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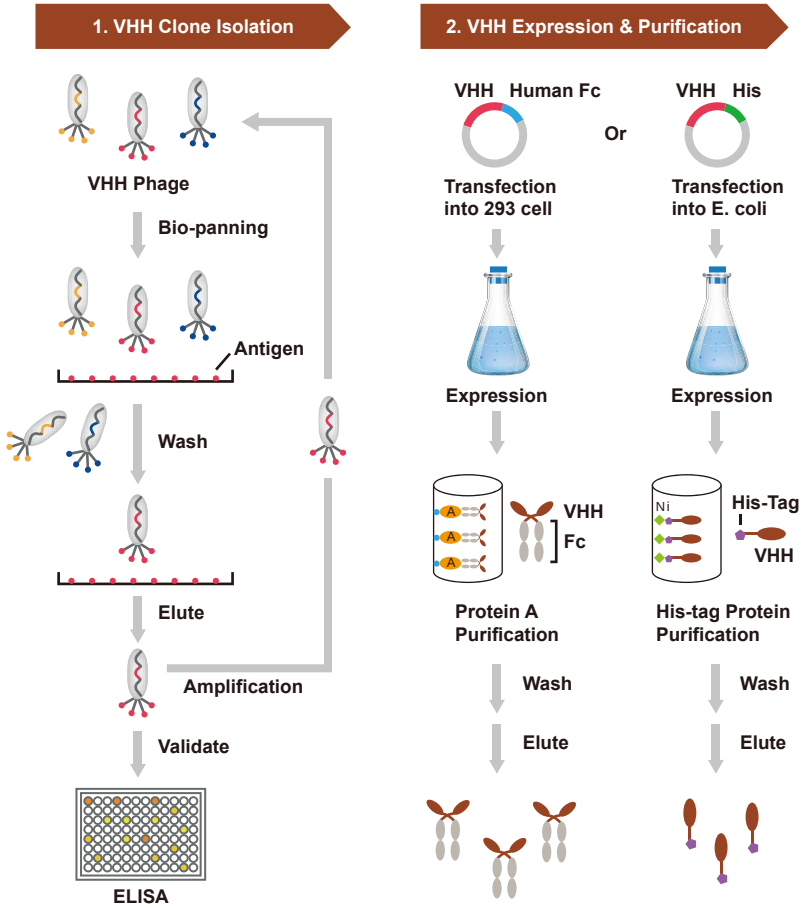
Camelid single domain antibody (sdAb), also known as VHH and nanobody, is the recombinant variable domain derived from camelid heavy-chain-only antibody. This configuration confers a number of unique properties. The small size and high stability of sdAb make it a promising tool for disease diagnosis and treatment. sdAb can penetrate tissue more easily and target difficult epitopes hidden in protein structure. Also, sdAb expresses well in many host systems and it is cost-effective to manufacture on a large scale.

Abnova offers Camelid Single Domain Antibody Service for production of target-specific sdAb from naïve camelid VHH library. By using the advanced naïve camelid VHH library screening technology, we screen the library and isolate the sdAb clones for your required antigens. Positive clones are sequenced and validated by ELISA. The selected clones will then be introduced into HEK293 expression vector or E. coli expression vector for transient and scalable sdAb production for many downstream applications.

Naïve Camelid VHH Library Screening Workflow

- sdAb clone isolated from naive Camelid VHH library
- Library size: 1.2 x 10^{12}
- Required screening antigen amount : 600µg
- Lead Time: 8-10 weeks
- Deliverables:
  1. Phage validation by phage ELISA data
  2. Up to 5 different VHH sequences
  3. Up to 5 purified sdAbs

Naïve Camelid VHH Library Screening



Advantages of Camelid sdAb

- High Affinity Small Size Antibody: Small size around 12-15 kD with high affinity and specificity
- High Stability: Stable in a wide range of temperatures and at extreme pH levels
- Enhanced Tissue Penetration: Better tissue penetration than IgG due to their small size
- Small Drug Feature: Recognize hidden antigenic sites in harsher conditions (heat, pH)
- Effective Manufacturing: Express well in various platforms, formulated at high concentrations, easy to be scaled up
- Animal Protection: No animal immunization
- High Diversity Libraries: Naïve VHH library size of 1.2 x 10^{12}

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