Recombinant Antibody Fragments
Single Chain FV (ScFv)
Randox Life Sciences

Randox Life Sciences offers high quality, cost effective human recombinant proteins, polyclonal and monoclonal antibodies and recombinant fragments to classic and novel targets. Our extensive range of life science products can be utilised in a number of applications including ELISA, western blot analysis, flow cytometry, immunohistochemistry and immunoaffinity purification.

What are ScFvs?

Single chain Fvs (ScFvs) are recombinant antibody fragments, which commonly consist of the variable (antigen binding) region of an immunoglobulin heavy chain covalently linked to the corresponding region of an immunoglobulin light chain. These regions are usually expressed in E.coli as a single continuous sequence, which are separated by a short linking amino acid sequence. ScFvs have multiple benefits over traditional monoclonal antibodies due to their greatly reduced size and ease of genetic manipulation. All Randox ScFvs are expressed from the DNA of pre-immunised sheep.

Advantages of ScFvs

- Small size
  - Increased coating concentrations
  - Better sample penetration
  - Higher yield
- Less interference – ScFvs have no Fc region
- Quick Expression – easily scalable for bulk orders
- Genetically engineered fusion Tags
  - Immobilisation
  - Detection
  - Conjugation
  - Purification
- DNA sequenced and stored, guarantees future antibody supply
- Epitope mapping available
- Primary manufacturer
  - expertise and technical assistance
  - Can offer advice on epitope targeting and potential pairing of antibodies
  - Low cost
  - Custom projects including novel targets, tags and formats

General Specification

**Host:** E. Coli  
**Format:** Single Chain Fv recombinant antibody fragment  
**pH:** 7.4  
**Buffer:** PBS containing 0.09% sodium azide preservative  
**Storage:** Stable at 4°C, long term storage at -20°C  
**Purity:** Affinity Purified to >90%
Recombinant Antibody Fragments Available

Randox Life Sciences now offer a catalogue of novel in-house manufactured ScFv products and can also provide a custom service for the isolation and production of novel ScFv fragments upon request.

How do ScFvs compare to traditional antibody molecules?

• Activity/Sensitivity
  - All Randox ScFv fragments are tested for high affinity binding to the immunogen and where possible to native (human) forms of the antigen.

• Specificity
  - All Randox ScFv fragments are tested for non-specific binding against a panel of related or unrelated antigens.

• Stability
  - All Randox ScFv fragments are tested for stability at higher temperatures in accelerated stability studies
  - All Randox ScFvs are certified for storage at 4°C with -20°C recommended for long term storage.

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<table>
<thead>
<tr>
<th>cTnI Epitope (amino acid seq.)</th>
<th>ScFv Clone ID</th>
<th>Cat No.</th>
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<tbody>
<tr>
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<td>RAF9406</td>
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</tbody>
</table>

Full epitope data for cardiac Troponin I ScFvs makes assay development easier!

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Sandwich Assay detecting Cardiac Troponin I using Randox scFv capture and conjugate pair

<table>
<thead>
<tr>
<th>Concentration of Cardiac Troponin I (ng/ml)</th>
<th>Signal (RLUs)</th>
</tr>
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<tr>
<td>10</td>
<td>150</td>
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<tr>
<td>0.1</td>
<td>1000</td>
</tr>
<tr>
<td>1</td>
<td>10000</td>
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</table>

Sandwich Assay detecting Cardiac Troponin I using Randox scFv capture and conjugate pair

*Assay performed on the Randox Investigator analyser*
What are ScFvs useful for?

- ELISA
- Immunohistochemistry
- Flow cytometry
- Immunoaffinity purification
- Western blotting
- Other immunological methods

ScFv Catalogue

- 46 ScFv clones against 18 different targets
- ScFvs against markers for cardiovascular disease, thyroid function, infectious agents and other disease conditions
  - Multiple clones per target – Ideal for assay development
  - Can offer advice on epitope targeting and potential pairing of antibodies
  - Custom projects including novel targets, tags and formats

Order online

www.randox-lifesciences.com