



## ESBATEch case story

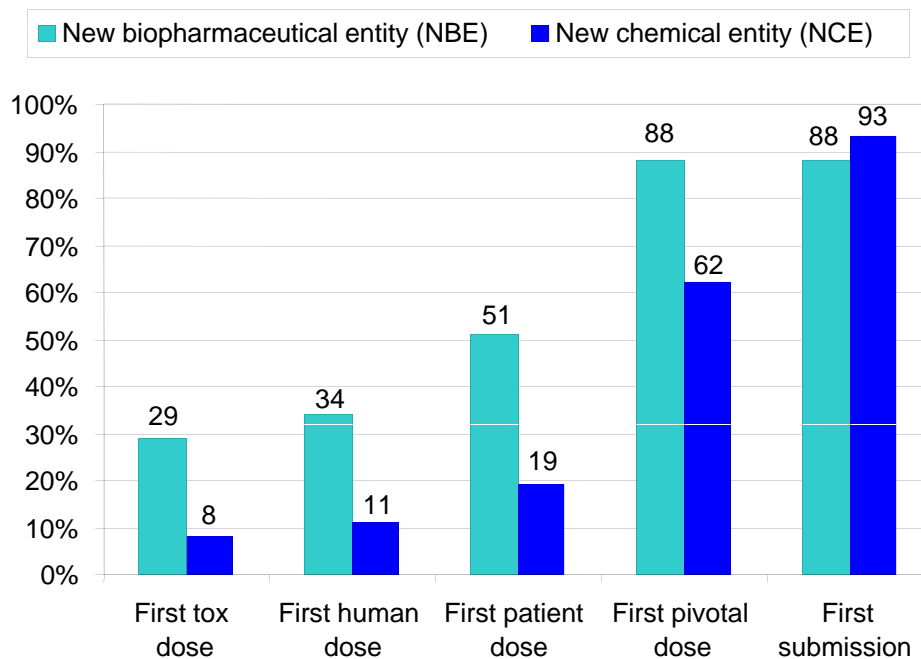
6 July 2011

10. Private Equity & Corporate Finance Conference

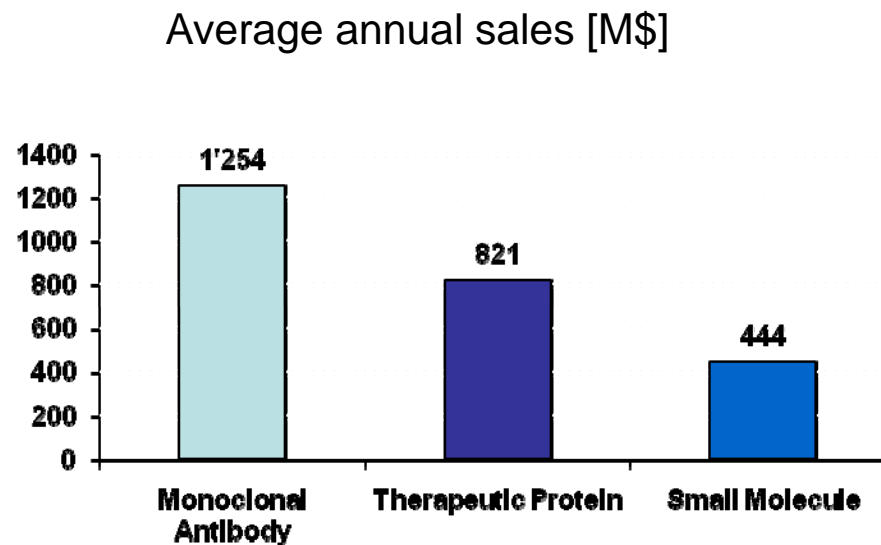
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# Antibodies are the most successful drugs

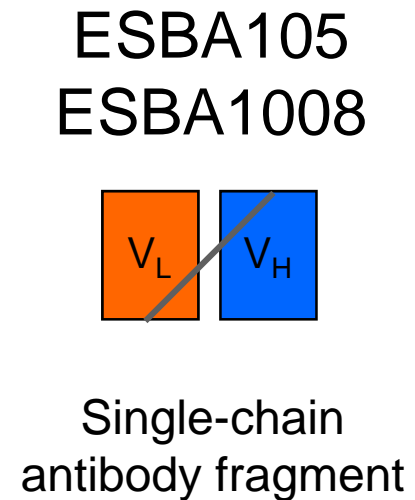
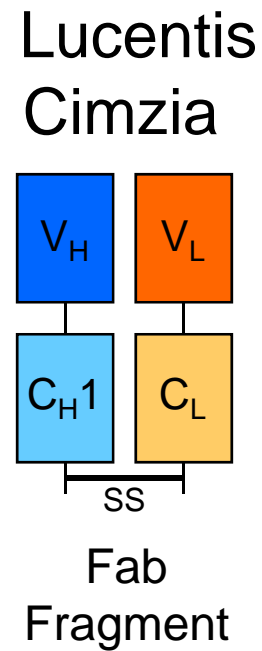
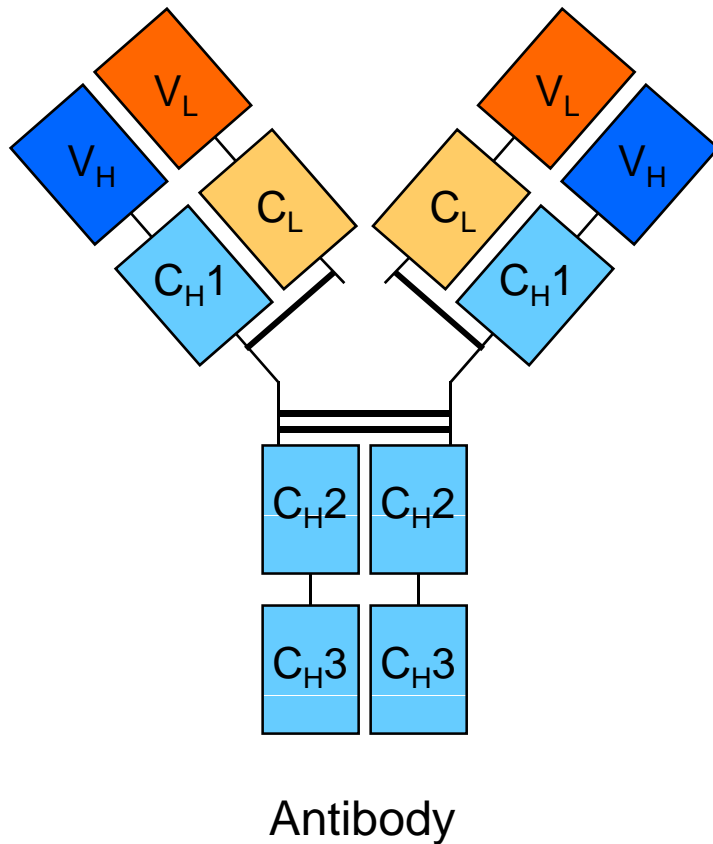


Source: CMR Database

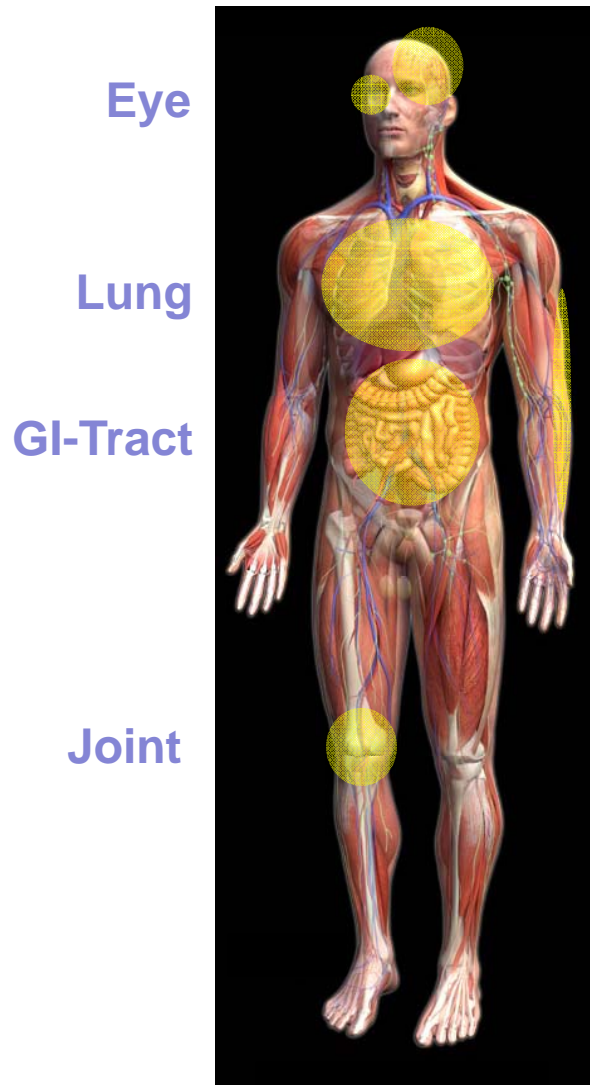


Source: Datamonitor

## Formats of antibody fragments

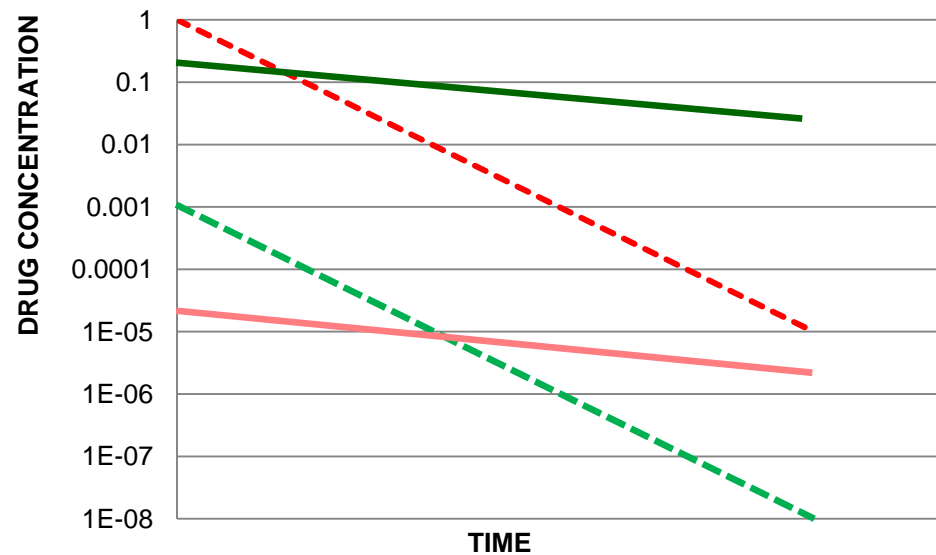


## Local therapy for safe and effective treatment



CNS

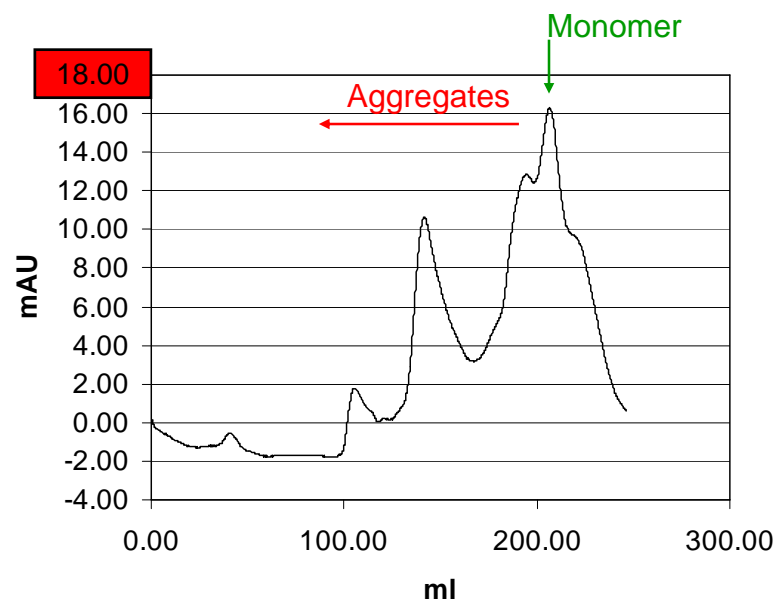
Skin



- - - Serum conc. following i.v. injection
- - - Local conc. following i.v. injection
- Local conc. following local application
- Serum conc. following local application

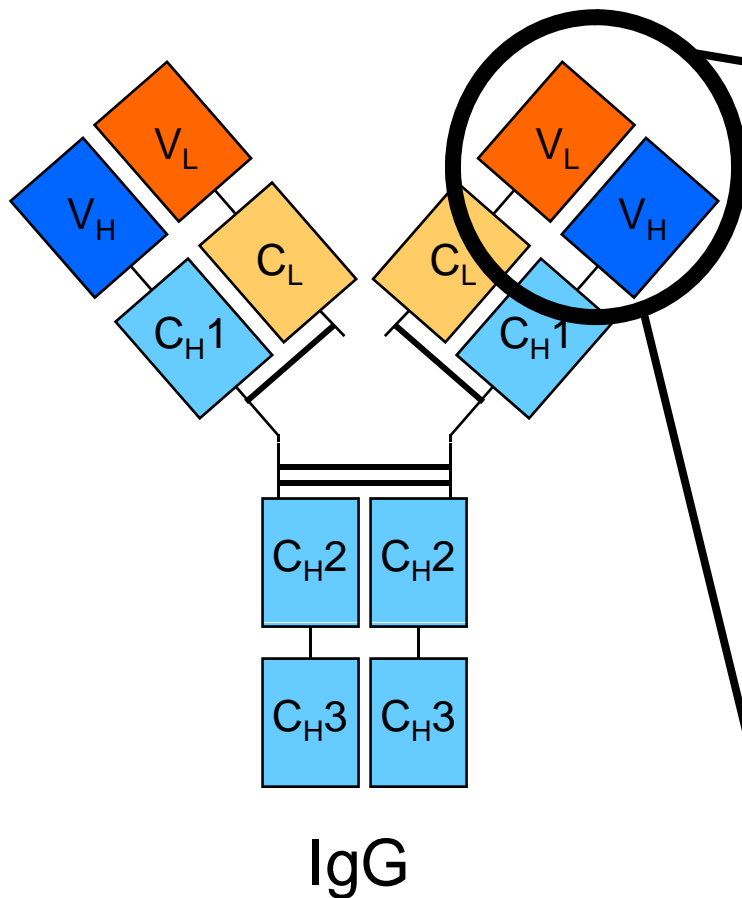
## Fragments lacking drug like properties

### Classical scFv



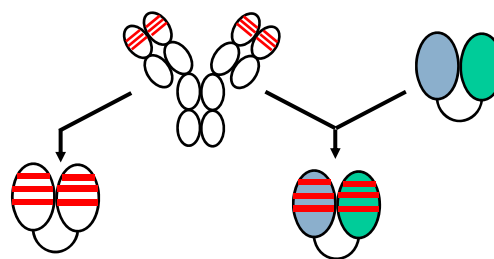
- Low yield
- Strong aggregation
- Low stability

## ESBATEch's unique approach

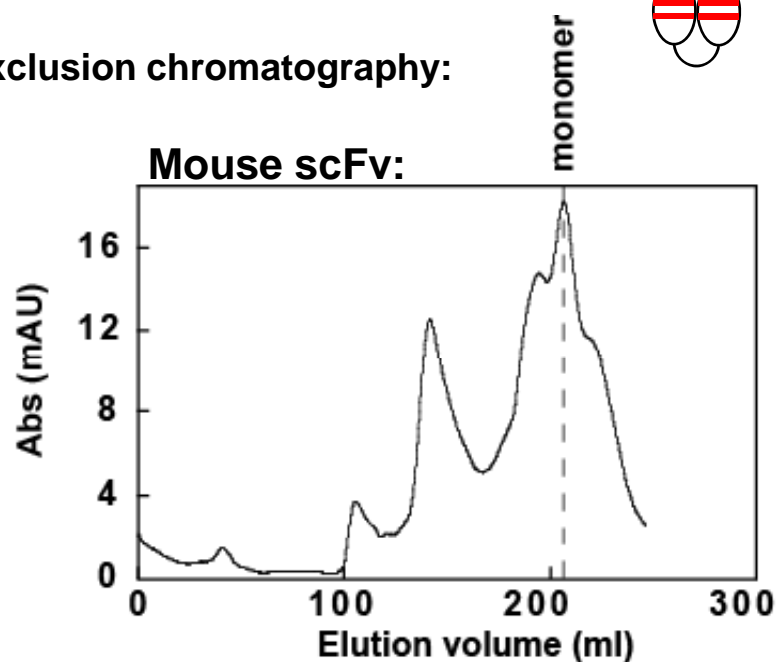


| IgG gene segments                          |   | Human |
|--|---|-------|
| V <sub>H</sub>                             |   | 1200  |
| V <sub>L</sub>                             | κ | 850   |
|  | λ | 400   |
| <p>&gt; 1.5 Mio fully human frameworks</p> |   |       |

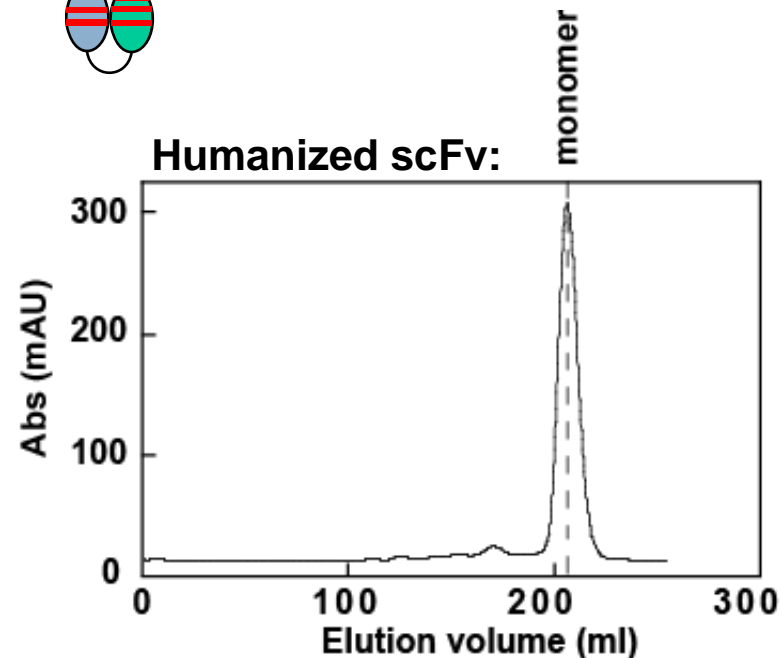
## Drug-like properties of ESBATech frameworks



Size-exclusion chromatography:



- Low yield
- Strong aggregation



- High yield
- Low aggregation

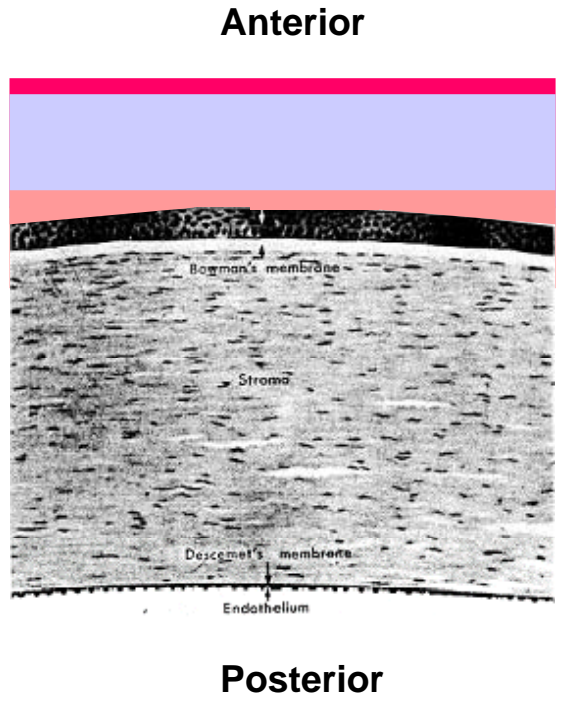
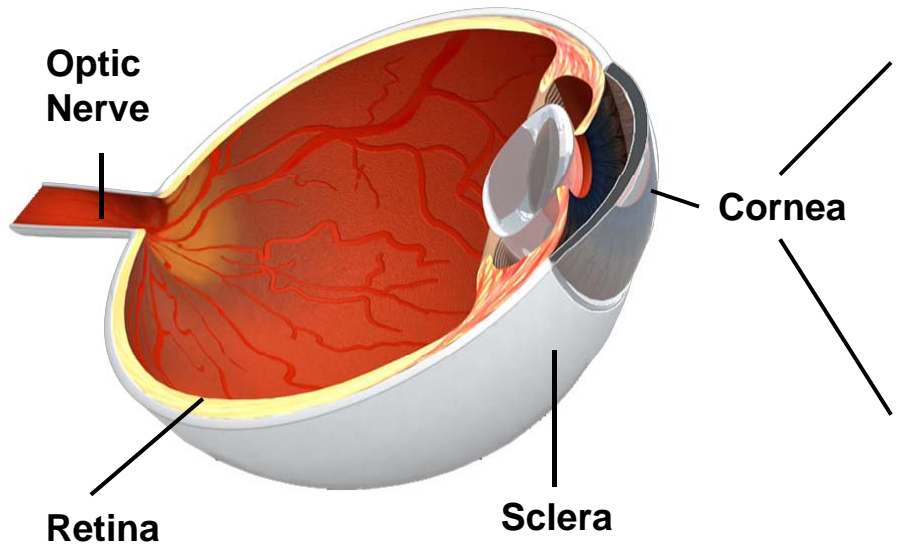


## ESBATech project portfolio before acquisition

| Indications                               | Target | Research | Preclinic | Phase I | Phase II | Phase III |  |
|---|--------|----------|-----------|---------|----------|-----------|--|
| ESBA105 Uveitis                           | TNF    |          |           |         |          |           |  |
| ESBA105 PK and post surgical inflammation | TNF    |          |           |         |          |           |  |
| ESBA105 Osteoarthritis                    | TNF    |          |           |         |          |           |  |
| ESBA1008 Angiogenesis                     | VEGF   |          |           |         |          |           |  |
| ESBA105 Respiratory                       | TNF    |          |           |         |          |           |  |



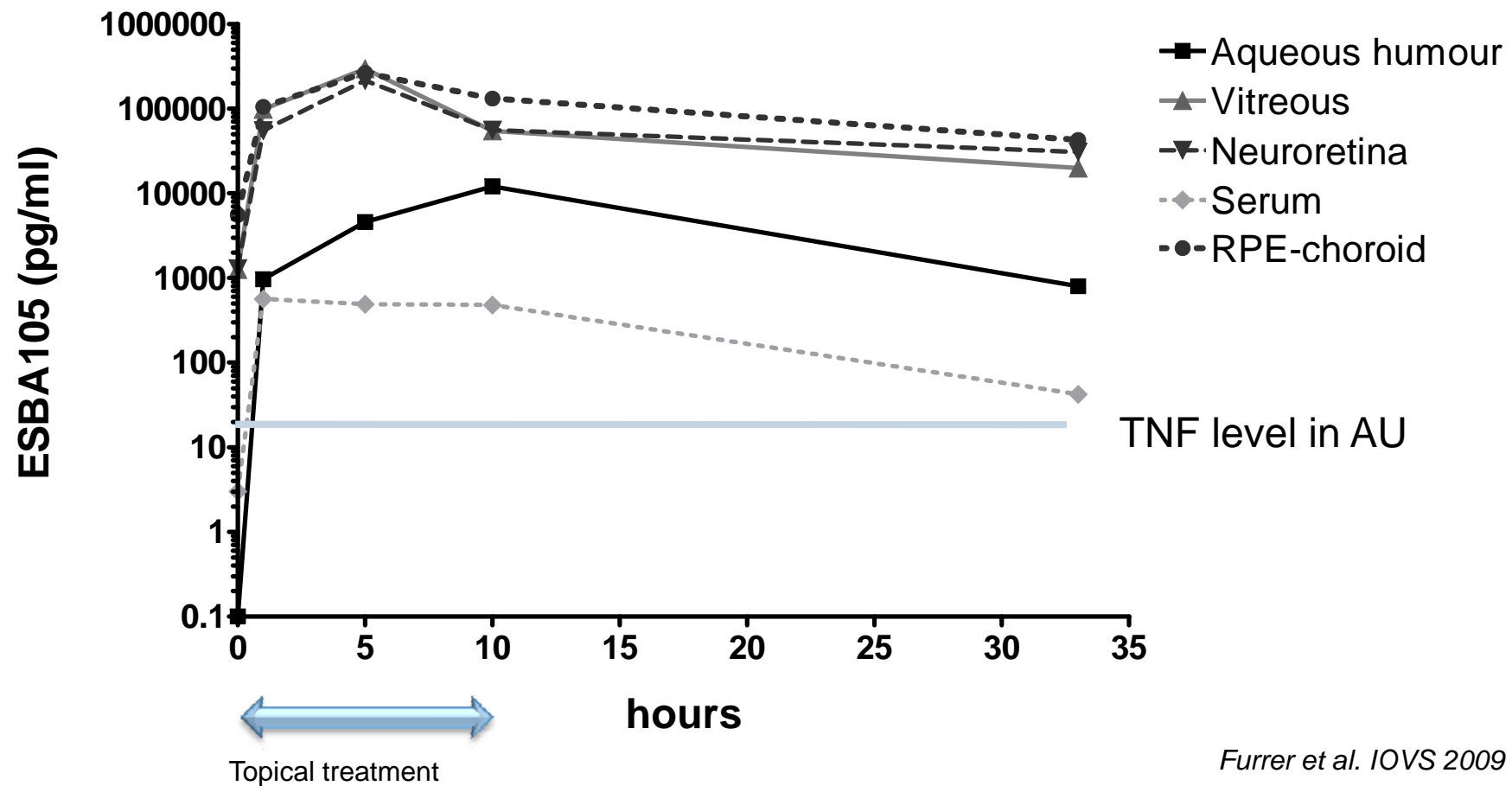
# Anatomy of the eye



- Oil layer
- Aqueous layer
- Mucin layer
- Corneal epithelium:  
Cut-off: 40kDa
- Stroma:  
Cut-off: 150kDa
- Descemet's membrane:  
Cut-off: 60kDa

Cross section of human cornea at 160X  
(from: Anant Mathur, Univ. of Rochester, 2005)

## Topical ESBA105 reaches therapeutic levels





*Advancing antibody fragment therapeutics*

## **Phase I of ESBA105**

- 27 healthy volunteers
- Randomized, vehicle-controlled, double-masked
- Single and repeat dose
- Dose escalation (up to 4 weeks, up to 16 daily topical dosings)

## **ESBA105: Phase II in progress**

Regulatory clearance to start two phase Ib/IIa clinical trials:

- **Human PK in cataract and vitrectomy surgery, post-surgical inflammation**
  - Examining human PK in anterior/ posterior chamber
  - Early PD/ efficacy readout in post-surgical inflammation
  - Total 90 patients, different dosing, PD part double-blind, placebo controlled
- **Acute anterior uveitis**
  - Proof of clinical concept in AAU patients
  - Changes in the level of intraocular inflammation (anterior chamber cell count according to SUN Working group criteria)
  - Enrollment of 25 patients
  - Open-label



## Advancing antibody fragment therapeutics

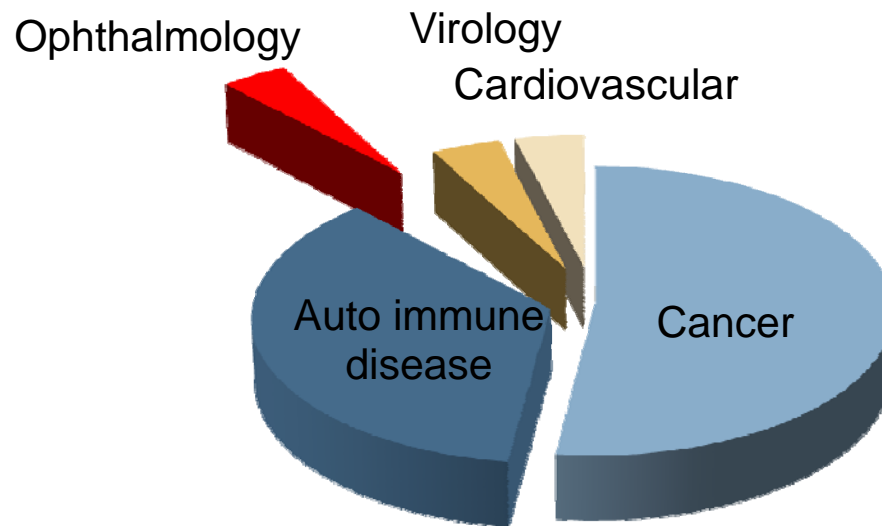
### Capital need

| Date       | Series    | Investors  | Capital raised [CHF] |
|------------|-----------|--|----------------------|
| April 2000 | Seed      | Novartis Venture Fund  | 1M                   |
| Sept 2001  | Series A  | Lombard Odier<br>Credit Suisse<br>BSI<br>Novartis Venture Fund<br>BioMedinvest<br>VI Partners      | 14.5M                |
| Aug 2006   | Series B  | Clarus Ventures<br>HBM Partners<br>SV Life Sciences<br>Novartis Venture Fund<br>VI Partners<br>ZKB | 50M                  |
| Aug 2007   | Series B2 | Same syndicate   | 23M                  |
|            |           | <b>TOTAL</b>   | <b>88.5M</b>         |

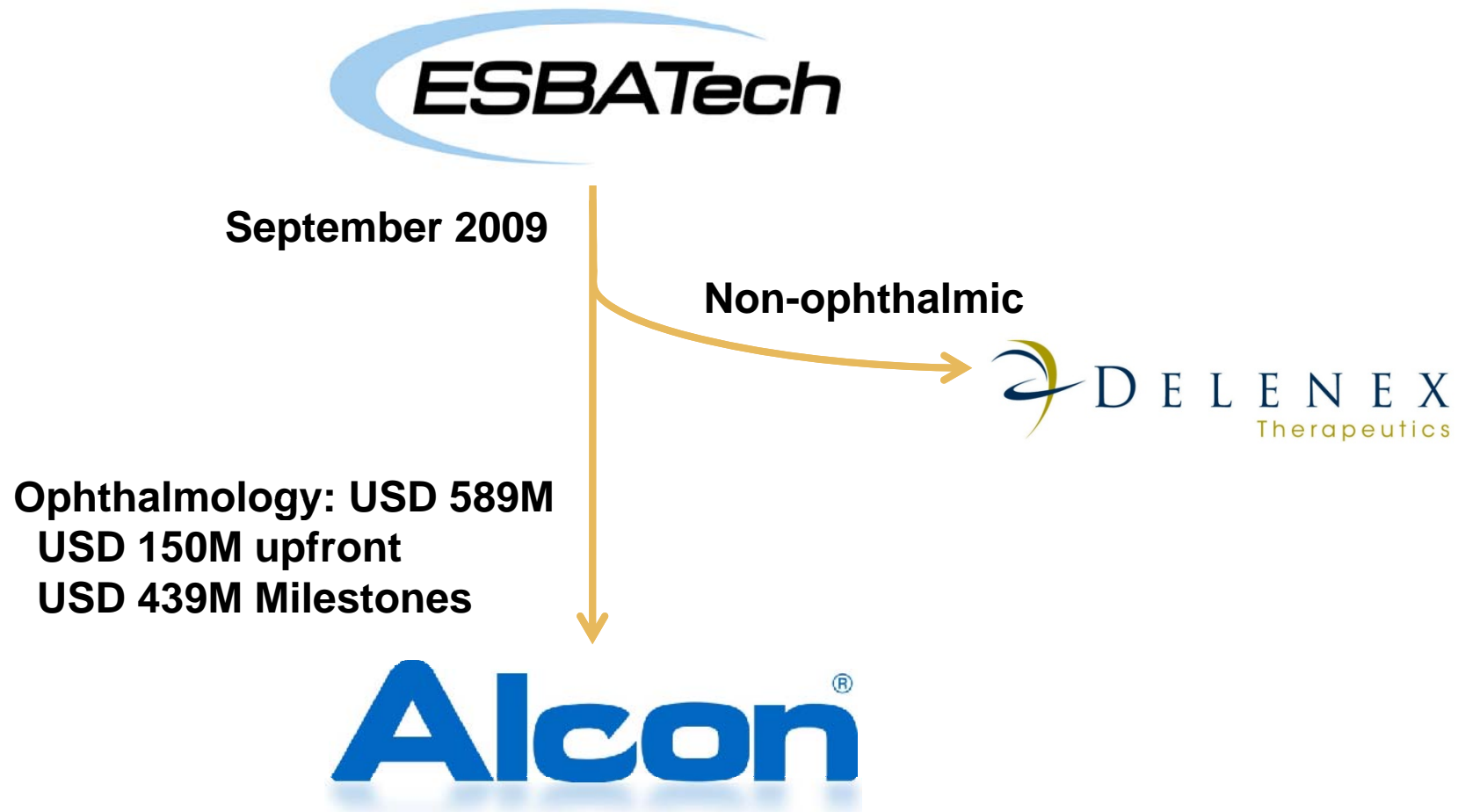


*Advancing antibody fragment therapeutics*

**Franchise deal**



## ESBATEch, an Alcon Biomedical Research Unit





## Acquisitions of antibody fragment companies

| Company         | Acquirer     | Date             | Stage           | Valuation                     |
|-----------------|--------------|------------------|-----------------|-------------------------------|
| <b>ESBATEch</b> | <b>Alcon</b> | <b>09 / 2009</b> | <b>Phase II</b> | <b>USD 589M <sup>1)</sup></b> |
| Adnexus         | BMS          | 09 / 2007        | Phase I         | USD 430M                      |
| Domantis        | GSK          | 12 / 2006        | Preclinic       | USD 454M                      |
| Avidia          | Amgen        | 09 / 2006        | Phase I         | USD 290M                      |
| NeuTec          | Novartis     | 06 / 2006        | Phase III       | USD 575M                      |

1) Ophthalmology franchise only



## **Maximizing platform value**

- Franchise deal of platform
- De-merger allows further maximizing platform value
- Alcon / Novartis resource to maximally develop platform
- Ophthalmology acquisition as validation for Delenex