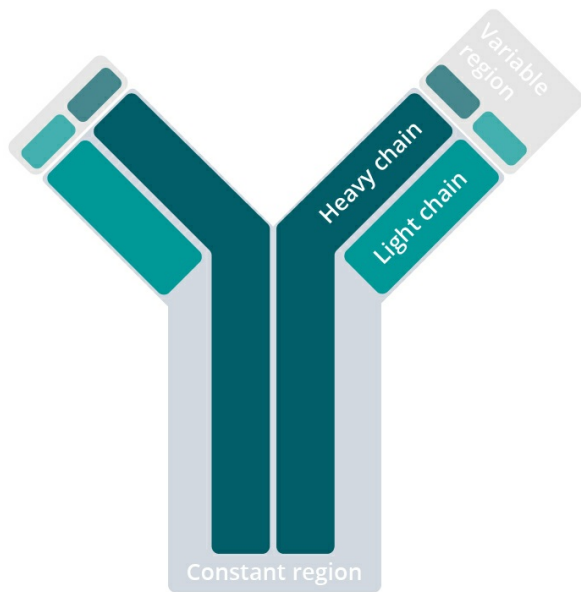


### 鼠 IgG 抗体

- [鼠 IgG 抗体](#)
- [鼠 IgG 抗体](#)
- [鼠 IgG 抗体](#)
- [鼠 IgG 抗体](#)
- [鼠 IgG 抗体](#)
- [鼠 IgG 抗体](#)

**鼠 IgG 抗体**  
 鼠 IgG 抗体 (Amzel and Poljak, 1979) 1  
 鼠 IgG 抗体

### 哺乳类 IgG 抗体



鼠 IgG 抗体

### 鼠 IgG 抗体

鼠 IgG 抗体 (Benner et al., 1981; Wootla et al., 2014)

鼠 IgG 抗体 (Benner et al., 1981; Wootla et al., 2014)

鼠 IgG 抗体

鼠 IgG 抗体

### 多克隆抗体

多克隆抗体是由多个B细胞克隆产生的，能识别抗原的多个表位。

1975年，Köhler和Milstein首次成功制备了单克隆抗体。1976年，Köhler和Milstein进一步改进了单克隆抗体的制备方法，使其能够识别抗原的特定表位。

多克隆抗体的制备过程包括免疫动物、提取血清、分离抗体等步骤。其优点是制备简单、成本低，但缺点是特异性较差、批次间差异大。

### 多克隆抗体



### 单克隆抗体



2

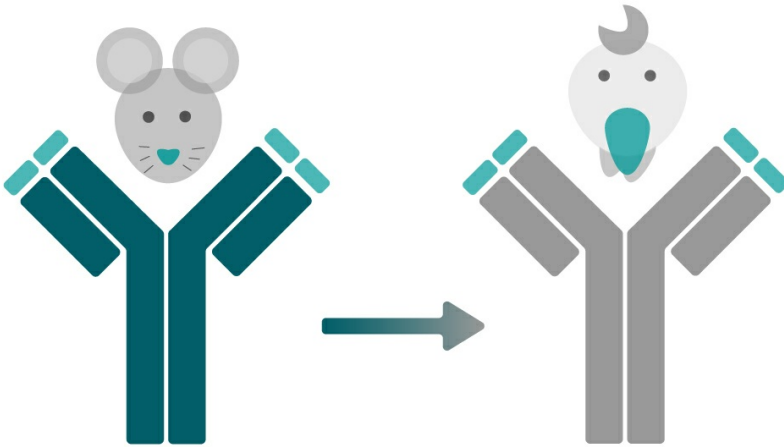
3

### 重链

重链抗体(Kuhnert and Reinhart, 2016)

重链抗体(Sahagan et al., 1986; Zalutsky et al., 1996)  
45

### 重链抗体



Original Monoclonal Antibody

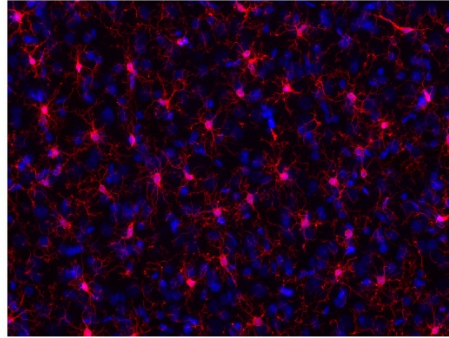
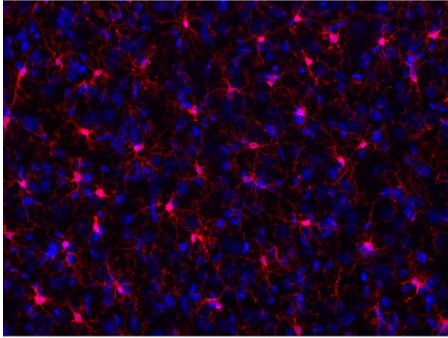
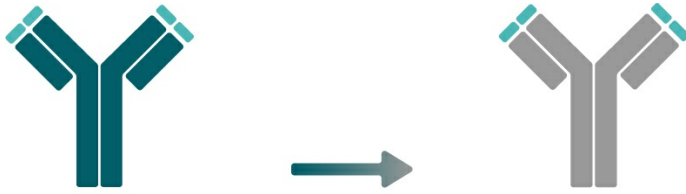
Chimeric Recombinant Antibody

4

### 重链抗体

重链抗体Synaptic Systems  
重链抗体

### IHC

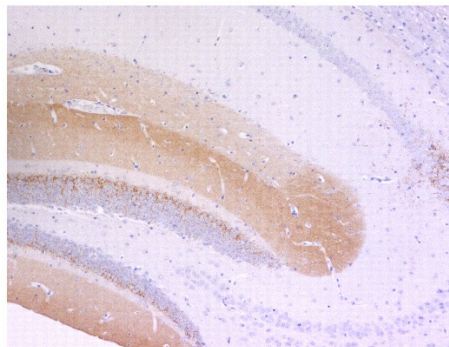
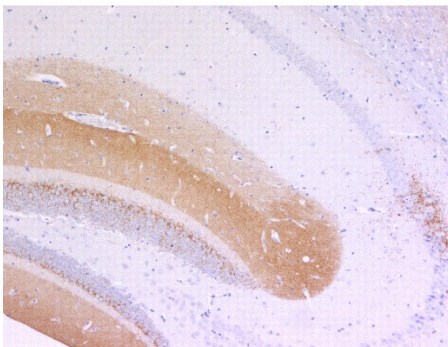
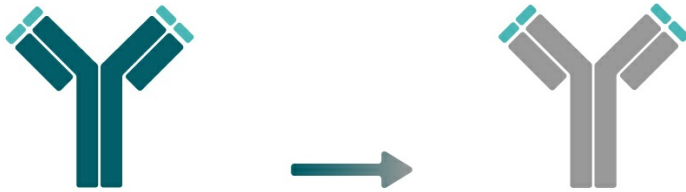


Mouse anti-IBA1 234 011

Chicken anti-IBA1 234 009

5: IHC IBA1 234 011 IBA1 234 011 IBA1 234 009 (IBA1 = red, DAPI = blue)

**IHC-P**



Mouse anti-VGLUT 2 135 421

Guinea pig anti-VGLUT 2 135 418

IHC-P VGLUT 2 135 421 VGLUT 2 135 418 (VGLUT 2 = brown, haematoxylin = blue)

**ICC**



Benner et al. 1981: Immunoglobulin isotype expression. II. Frequency analysis in mitogen-reactive B cells. [PMID: 6975718](#)

Wootla et al., 2014: Polyclonal and monoclonal antibodies in clinic. [PMID: 24037837](#)

Koehler and Milstein, 1975: Continuous cultures of fused cells secreting antibody of predefined specificity. [PMID: 1172191](#)

Koehler and Milstein, 1976: Derivation of specific antibody-producing tissue culture and tumor lines by cell fusion. [PMID: 825377](#)

Kuhnert and Reinhart, 2016: Advances in recombinant antibody manufacturing. [PMID: 26936774](#)

Shahagan et al., 1986: A genetically engineered murine/human chimeric antibody retains specificity for human tumor-associated antigen. [PMID: 3088107](#)

Zalutsky et al., 1996: Chimeric anti-tenascin antibody 81C6: increased tumor localization compared with its murine parent. [PMID: 8832699](#)