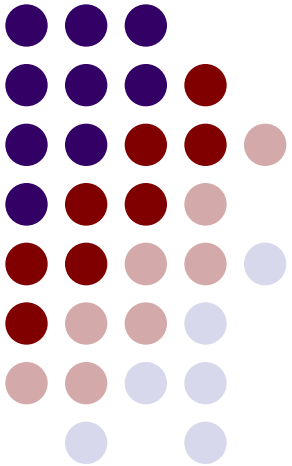
Birch Stewart Kolasch Birch LLP

Prosecution History Estoppel from Dependent Claims

UCB, Inc. v. Yeda Research & Dev. Co.

(Fed. Cir. Sept. 8, 2016)



Gary Juskowiak

December 14, 2016

Monoclonal antibodies produced through hybridomas

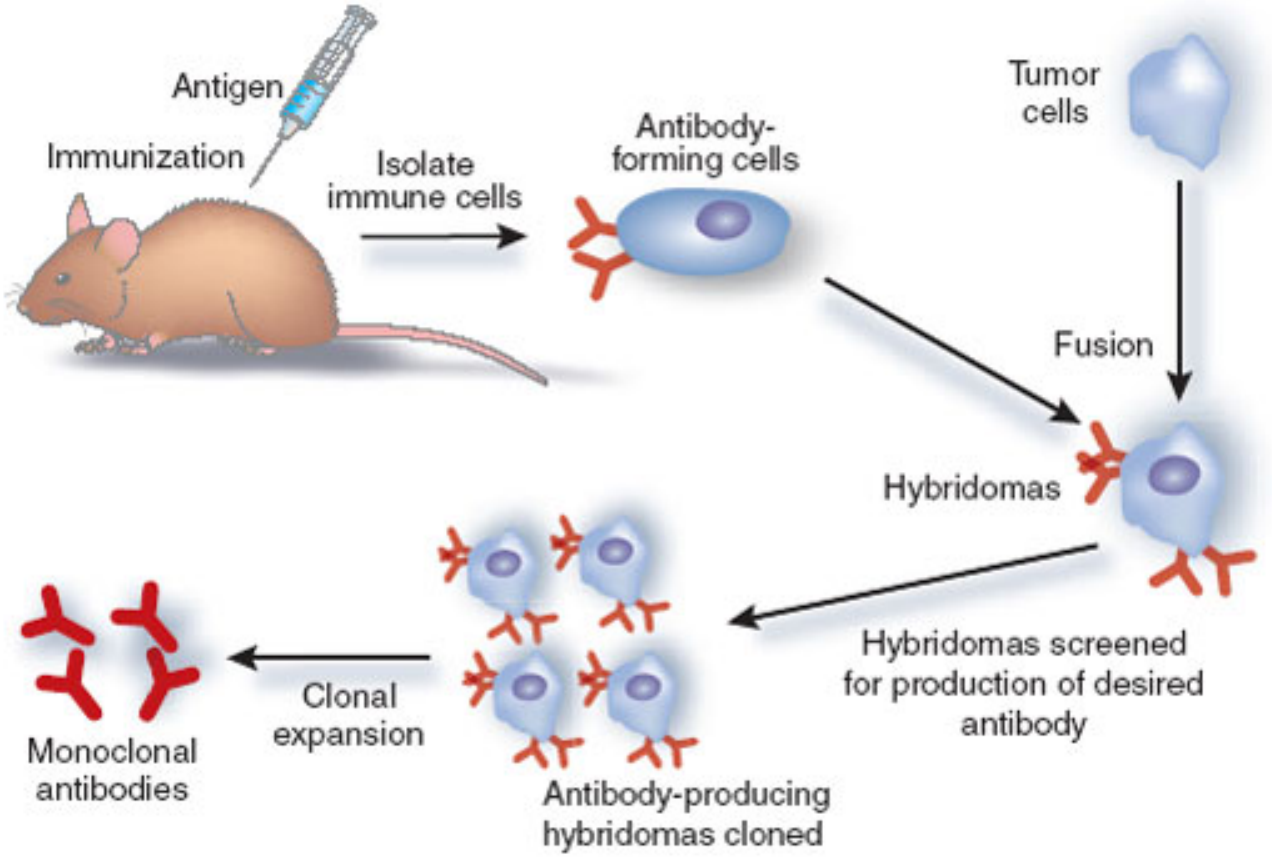
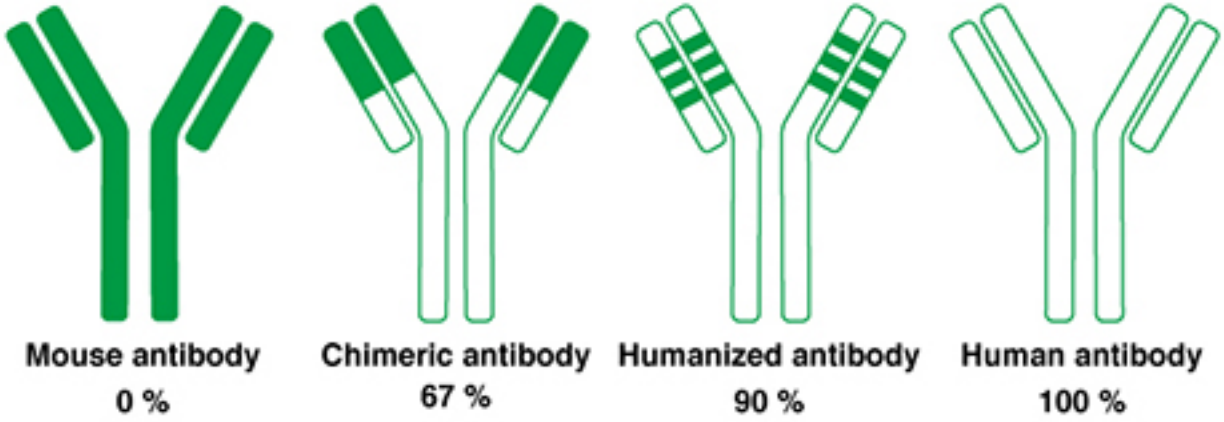


Figure from Michnick et al. *Nature Chemical Biology*, 2008, 4, 326

Chimeric and humanized monoclonal antibodies

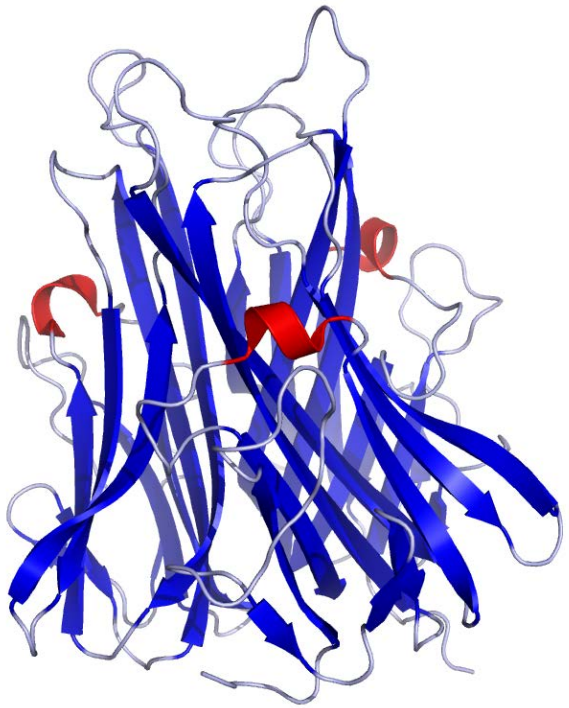


- Chimeric and humanized antibodies are created by genetic engineering
- Chimeric and humanized antibodies are better tolerated
- Percentages listed are approximate

Figure from “Glossary” at Medical & Biological Laboratories Co., Ltd.

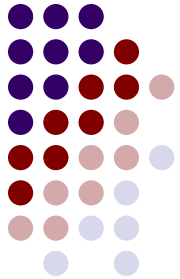
Tumor necrosis factor α

- TNFα is a cytokine produced by immune cells to regulate other immune cells.
- Induces inflammation
- Therapeutic applications
  - Used an immunostimulant
  - Target for monoclonal antibodies to suppress immune system



"1TNF" from RCSB Protein Data Bank

"Murine Monoclonal Antibody Binding TNFα"



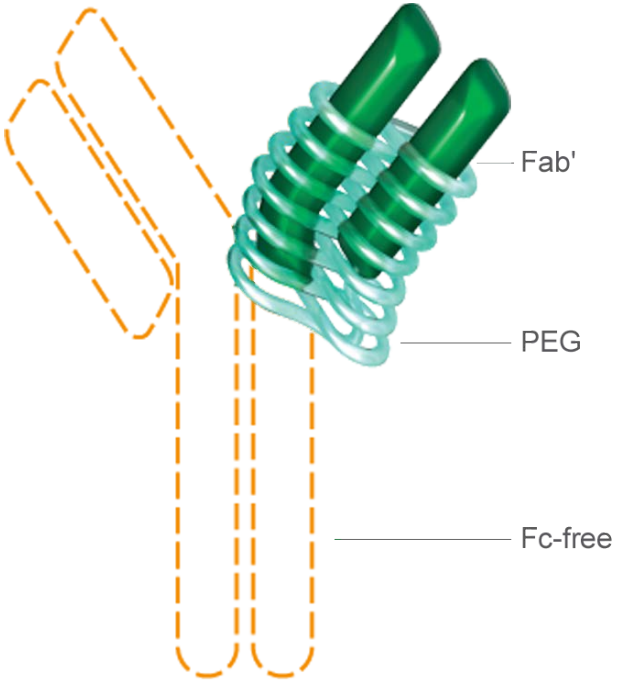
- The 6,090,923 Patent assigned to Yeda
- The patent is to the first monoclonal antibodies to TNFα.
- Independent claims
  - Claim 1: "A **monoclonal antibody** which specifically binds a human cytotoxin . . . [characterizes cytotoxin as TNFα]"
  - Claims 5 / 9: "A **monoclonal antibody** which specifically recognizes and binds a human cytotoxin . . . [characterizes cytotoxin as TNFα]"
- TNFα was disclosed, but at the time of filing it was uncertain that the "human cytotoxin" was "TNFα".

Cimzia® (certolizumab pegol)

- Humanized and pegylated monoclonal antibody Fab' fragment to TNFα by UCB
  - Mouse CDR regions
- Treatment for various overactive immune system diseases
  - Crohn's disease
  - Rheumatoid arthritis
  - Psoriatic arthritis
  - Ankylosing spondylitis
- Sales of $1.08 billion in 2015
  - $4,700 for 2 syringe kit (4 weeks)

Comparison between antibodies disclosed in the ‘923 Patent and Cimzia®

- Both are monoclonal antibodies that bind TNFα
- However, Cimzia® is
  - a Fab’ fragment
  - humanized
  - pegylated



CIMZIA—PEGylated Fab' (TNF) inhibitor

Figure from Cimzia® for health care providers

Timeline of events

Dec. 1984
Application for '923 patent filed

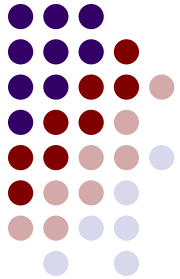
Jul. 2000
'923 patent issues (submarine)

Nov. 1984
Mouse-human chimeric antibodies but not known as "monoclonal antibodies"

1986
Humanized antibodies

2008
First FDA approval for Cimzia®

Pertinent claim amendments before the ‘923 patent issued



- Independent claims in ‘923 patent
  - “A **monoclonal antibody** which specifically binds a human cytotoxin . . . [characterizes cytotoxin as TNFα]”
  - Does not require the monoclonal antibody to be murine monoclonal antibodies.
  - Yeda argued during prosecution that “monoclonal antibody” should encompass chimeric and humanized antibodies.
  - Rejected for enablement
  - But rejection overcome by Declaration on mousehuman chimeric antibodies through genetic engineering.

Pertinent claim amendments before the ‘923 patent issued

- Yeda added dependent claims to “chimeric” antibodies
  - Argued that the term “chimeric” encompassed both chimeric and human antibodies during prosecution.
  - Rejected for lacking written description.
  - Dependent claims canceled.

Claim term at issue

- Does "monoclonal antibody" in the '923 patent encompass chimeric or humanized antibodies?

Literal infringement

- Asserted claims not helpful in determining “monoclonal antibody”
- Claim differentiation: dependent claims to “murine monoclonal antibody” added 14 years after filing.
- Specification only discloses murine monoclonal antibodies derived from hybridomas.
- Prosecution history does not support broad definition
- “Monoclonal antibodies” at time of filing referred to hybridomas
- “Monoclonal antibodies” in 1984 did not encompass chimeric or humanized antibodies. *Chiron Corp.,* 363 F.3d 1237 (Fed. Cir. 2004).
- Therefore, “monoclonal antibody” does not literally include chimeric or humanized antibodies.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Doctrine of equivalents

- "Even without literal infringement of a certain claim limitation a patentee may establish infringement under the doctrine of equivalents if an element of the accused device 'performs substantially the same function in substantially the same way to obtain the same result as the claim limitation'" *EMD Millipore Corp.*, 768 F.3d. 1196 (Fed. Cir. 2014).
  - 1. Performs substantially the same function
  - 2. In substantially the same way
  - 3. To obtain substantially the same result

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Doctrine of equivalents

- The purpose of the doctrine of equivalents is to "allow . . . the patentee to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes." *Festo Corp*, 535 U.S. 722 (2002).
- Are humanizing a monoclonal antibody, creating a Fab' fragment and pegylating that fragment "insubstantial alterations"?

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Doctrine of equivalents

- "Thus the doctrine of equivalents is invoked to prevent a 'fraud on the patent,' when an accused infringer is 'stealing the benefit of the invention' by making insubstantial changes that avoid the literal scope of the claims." *EMI Grp. North America, Inc.*, 157 F.3d 887 (Fed. Cir. 1998).

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel

- "'Legal limitation' on the range of equivalents available to a patentee . . . which requires that the claims of a patent be interpreted in light of the proceedings in the PTO during the application process." *Festo Corp*, 535 U.S. 722 (2002) (*Festo I*).

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel

- "Prosecution history estoppel ensures that a patentee does not use the doctrine of equivalents to reach subject matter covered in claims 'that have been canceled or rejected.'"
- Traditionally applies to subject matter canceled from within a claim.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel

- "When . . . The patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent." *Festo I.*

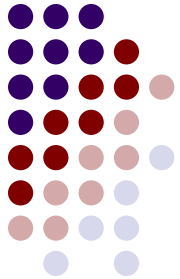
UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel – step 1 (narrowing amendment)

- "First, the accused infringer must establish that an amendment filed before the USPTO narrowed the literal scope of the claim". *See Festo Corp*, 344 F.3d 1359 (Fed. Cir. 2003) (*Festo II*).

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

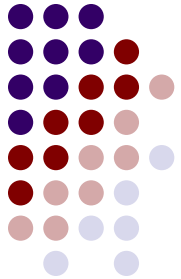
Prosecution history estoppel – step 1 (narrowing amendment)



- Yeda added dependent claims to “chimeric” antibodies and explained during prosecution that “chimeric” encompasses chimeric and humanized antibodies in dependent claims.
  - USPTO rejected dependent claims for lack of written description.
  - Yeda canceled these claims.
- Narrowed the literal scope of the claim
  - “Yeda’s cancellation of the claim language is ‘taken as a concession that the invention as patented does not reach as far as the original claim.’” quoting *Festo I*.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

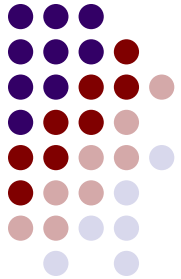
Prosecution history estoppel – step 1 (narrowing amendment)



- Yeda argued that its cancellations did not narrow the scope of the claims.
  - Yeda argued that "cancellation of dependent claims does not narrow the scope of a broader independent claim that was not amended."
- "Cancelled claims can operate to narrow the issued claims."
  - "Claims are interpreted by reference to 'those that have been canceled or rejected.'" *Festo I* (quoting *Schriber-Shroth,* 311 U.S. 211 (1940)).

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel – step 1 (narrowing amendment)



- "The issue is not what the scope of claim 41 would have been if the dependent claims had not been introduced or had not been canceled. The issue is how the cancellation of the dependent claims in response to the examiner's rejection affected the scope of the independent claims."

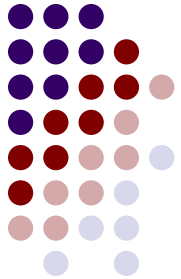
UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel – dependent claims

- "Yeda argues that absent a narrowing amendment to the proposed claim that is now claim 1, there can be no prosecution estoppel to the scope of claim 1 merely because some proposed different claims were rejected."
- "This is not a correct general principle . . . the general rule is that a patent applicant cannot later obtain scope that was requested during prosecution, rejected by the Examiner, and then withdrawal by the applicant."
- Yeda is estopped from including chimeric and humanized antibodies within the scope of the monoclonal antibodies claims in the '923 patent.

UCB Inc., (Fed. Cir. 2016)

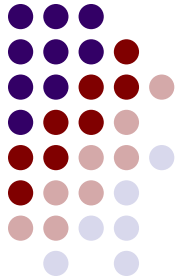
Prosecution history estoppel – step 2 (rationale)



- "If the accused infringer establishes a narrowing amendment, then the reason for the amendment must be assessed."
- "If the prosecution history does not reveal the reason for the amendment, then the amendment is presumed to be substantially related to patentability and a presumption of prosecution history estoppel arises". *See Festo II*.
- "Patentee may then attempt to rebut the presumption that the amendment was related to patentability." *See Festo II.*

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

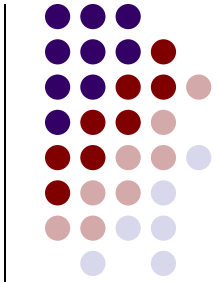
Prosecution history estoppel – step 2 (rationale)



- Yeda asserted that it did not have the purpose of renouncing coverage of the chimeric and humanized antibodies by canceling the dependent claims.
- Not a subjective test of intent
  - "the analysis is not whether the patentee intended to renounce claim scope through its actions, but instead whether the narrowing amendment was made 'for a substantial reason related to patentability'" quoting *Festo II*.
- Yeda could not rebut the presumption that the amendment was related to patentability with alleged subjective intent.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

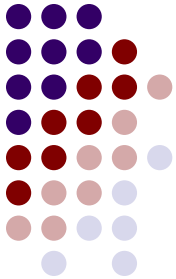
Prosecution history estoppel – step 3 (scope)



- "At the third step, the scope of the surrendered subject matter must be determined".
- "The presumption is that the patentee surrendered all subject matter between the original claim and the narrowed claim." *See Abbott Labs*, 323 F.3d 1324 (Fed. Cir. 2003).

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

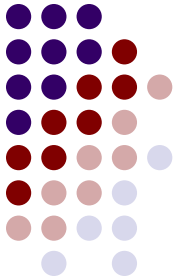
Prosecution history estoppel – step 3 (scope)



- Yeda argued that the scope of surrender does not extend to humanized antibodies because “humanized” is not recited in claims.
- However, Yeda defined “chimeric” as including humanized antibodies during prosecution.
- Yeda surrendered both chimeric and humanized antibodies.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

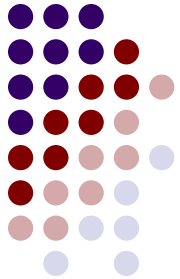
Prosecution history estoppel – step 4 (unforeseeable)



- "Finally, 'the patentee may rebut the presumption of total surrender by demonstrating that it did not surrender the particular equivalent in question.'" quoting *Festo II*.
- Must show that "an alleged equivalent would have been 'unforeseeable at the time of the amendment and thus beyond a fair interpretation of what was surrendered.'" quoting *Festo II*.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Prosecution history estoppel – step 4 (unforeseeable)



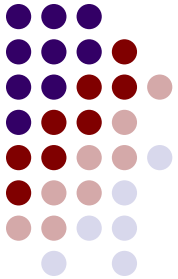
- Yeda argued it could not have foreseen humanized antibodies at the time of the invention.
- "This argument fails because 'the time when the narrowing amendment was made, and not when the application was filed, is the relevant time for evaluating unforeseeability.'" quoting *Festo II*.
- When dependent claims were cancelled, chimeric and human antibodies were not unforeseeable.

UCB Inc., 117 F. Supp. 3d 755 (E.D. Va 2015)

Outcome

- District court
  - “monoclonal antibody” in ‘923 patent is “a homogenous population of a single type of antibody produced via hybridoma and not including chimeric or humanized antibodies.”
  - Summary judgement for non-infringement either literally or under the doctrine of equivalents by UCB over the ‘923 patent to Yeda.
- Affirmed by Federal Circuit
  - “Such estoppel was reasonably applied to claim 1 by the district court, although claim 1 had not been amended.”

What if Yeda had not added the dependent claims?



- Would Yeda have succeeded under the doctrine of equivalents even if prosecution history estoppel did not apply?
  - Both are monoclonal antibodies that bind TNFα
    - (1) Performs substantially the same function, (2) In substantially the same way, (3) to obtain substantially the same result?
  - Cimzia® is (1) a Fab' fragment, (2) humanized, and (3) pegylated
    - Are these "insubstantial alterations"?
  - Note that Yeda argued that "monoclonal antibody" in independent claim applied to chimeric and humanized antibodies during prosecution.

Conclusion

- When should you amend the claims to try and capture new developments and embodiments in the field through literal infringement and when should you instead rely on the doctrine of equivalents?