HUMABS BioMed

Una realtà in costante crescita e sviluppo, cerniera con l'industria e l'economia.
Quali prospettive di crescita e sinergie con un Bioparco e con AlpTransit?

Humabs BioMed SA
Via Mirasole 1
6500 Bellinzona
Switzerland
www.humabs.com

ERSBV ENTE REGIONALE PER LO SVILUPPO BELLINZONESE E VALLI

Humabs in breve

- Fondata nel 2004 come *spin-off* dell'Istituto di Ricerca in Biomedicina (IRB) di Bellinzona
- Basata su tecnologie sviluppate dal Prof. Antonio Lanzavecchia che permettono di selezionare anticorpi umani monoclonali di particolare potenza e efficacia
- Ha ottenuto brevetti sulle tecnologie e sui prodotti (anticorpi umani monoclonali)
- Ha concluso contratti di licenza con due grosse ditte farmaceutiche per sviluppare i propri prodotti contro HCMV (2009) e Influenza A e B (2012)
- Ha concluso contratti di collaborazione con diverse ditte farmaceutiche per la scoperta e/o caratterizzazione di anticorpi attivi contro nuovi target
- Ha stabilito una rete di collaborazioni di alta qualità con l'IRB e con altri istituti accademici in tutto il mondo

HUMABS BioMed

Humabs BioMed SA, Spin-Off dell'IRB di Bellinzona

Humabs BioMed Management

Alcide Barberis, PhD, President & CEO
Davide Corti, PhD, Senior VP Research
Urs Keiser, CFO

Board of Directors

William Rutter, PhD, Chairman
Jakob Nuesch, PhD
Thomas Hecht, MD

Scientific Advisors

Antonio Lanzavecchia, MD, Founder and Chief Scientific Advisor
Federica Sallusto, PhD, Scientific Advisor
Stephan Urban, PhD, Scientific Advisor
Hans Hirsch, MD, Scientific Advisor

Humabs BioMed Staff

Barbara Guarino, PhD
Elisabetta Cameroni, PhD
Siro Bianchi, Technician
Anna De Marco, MSc.
Gloria Agatic, Technician
Fabrizia Vanzetta, Technician
Bettina D'Ercole, Executive Assistant

External Support

Synergenics, San Francisco
Corporate and Financial Counsels for US

Bär & Karrer, Zug
Legal counsel

Graf von Stosch, München
Intellectual Property Counsel Europe

Global Patent Group, St. Louis
Intellectual Property Counsel US

3

HUMABS BioMed

Research & Development

Laboratori a Bellinzona

3 laboratories, 350m^2 equipped for HT- screening and antibody engineering, expression and purification

Core facilities: heavy Robotics in place

Flow cytometry: FACSAria, LSR-Fortessa, FACSCanto, FACSArray, FACSCalibur

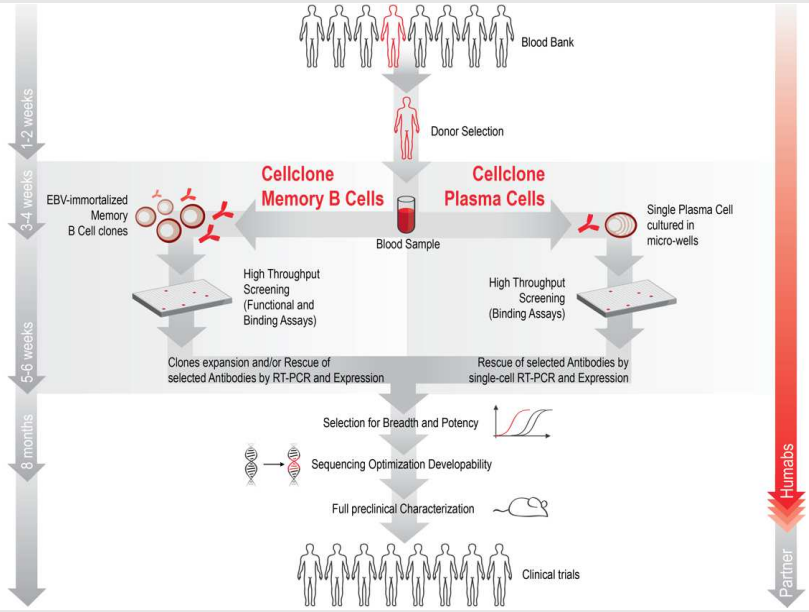
High content imaging: HT-BD Pathway 855

Protein production facility: fPLC, HPLC, bacterial, insect and mammalian expression systems for in house production of gram quantities of antibodies

4

HUMABS BioMed

Humabs' Cellclone Technologies



5

Nature Medicine 2004; Science 2011; Nature 2013

HUMABS BioMed

Anti-infective antibodies: Influenza A and B

An antibody neutralizing both Group 1 and Group 2 Influenza A virus

Science
AAAS

12 AUGUST 2011 VOL 333 **SCIENCE** www.sciencemag.org

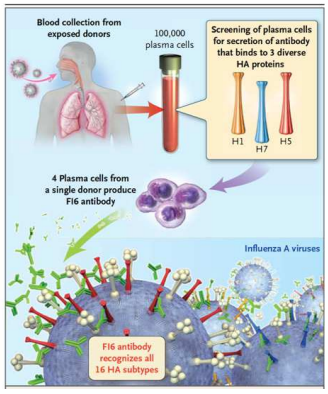
A Neutralizing Antibody Selected from Plasma Cells That Binds to Group 1 and Group 2 Influenza A Hemagglutinins

Davide Corti,[1,2*] Jarrod Voss,[3*] Steven J. Gamblin,[3*] Giosiana Codoni,[1*] Annalisa Macagno,[1] David Jarrossay,[1] Sebastien G. Vachieri,[3] Debora Pinna,[1] Andrea Minola,[1] Fabrizia Vanzetta,[2] Chiara Silacci,[1] Blanca M. Fernandez-Rodriguez,[1] Gloria Agatic,[2] Siro Bianchi,[2] Isabella Giacchetto-Sasselli,[1] Lesley Calder,[3] Federica Sallusto,[1] Patrick Collins,[3] Lesley F. Haire,[3] Nigel Temperton,[4] Johannes P. M. Langedijk,[5†] John J. Skehel,[3‡] Antonio Lanzavecchia[1,6‡]

The NEW ENGLAND JOURNAL of MEDICINE

Stalking Influenza Diversity with a Universal Antibody

Charles J. Russell, Ph.D.



N ENGL J MED 365;16 NEJM.ORG OCTOBER 20, 2011

6

HUMABS BioMed

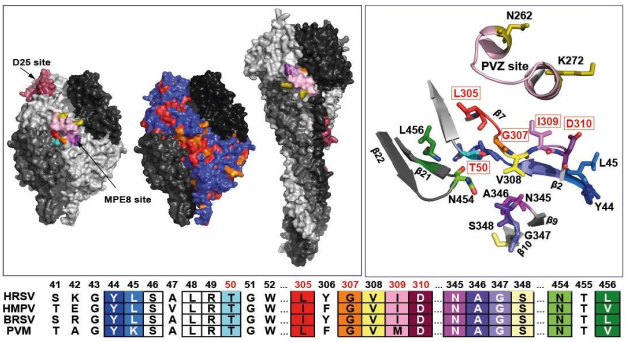
Anti-infective antibodies: RSV and MPV

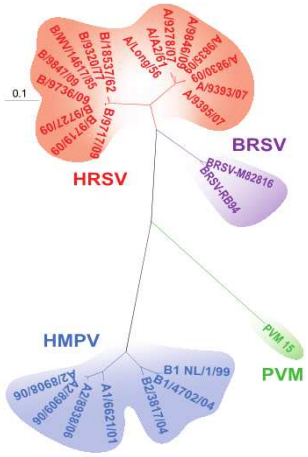
An antibody neutralizing four paramyxoviruses

nature

Cross-neutralization of four paramyxoviruses by a human monoclonal antibody

Davide Corti[1,2], Siro Bianchi[1], Fabrizia Vanzetta[1], Andrea Minola[2], Laurent Perez[2], Gloria Agatic[1], Barbara Guarino[1], Chiara Silacci[2], Jessica Marcandalli[2], Benjamin J. Marsland[3], Antonio Piralla[4], Elena Percivalle[4], Federica Sallusto[2], Fausto Baldanti[4]





7

HUMABS BioMed

Humabs BioMed: "Anticorpi dai Vincitori"

HUMABS BioMed

www.humabs.com

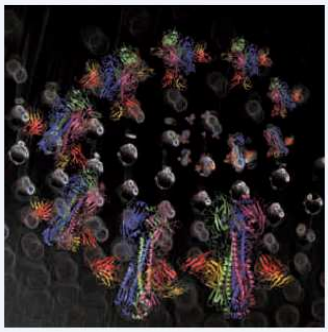
HUMABS BioMed

The antibodies of winners make the difference

Humabs BioMed is using antibodies from individuals that have survived serious infections to create better antibody therapeutics to treat disease.

The immune systems of some people are better than those of others at prompting a therapeutic immune response to antigens. There have been several reported cases of patients surviving with, for example, an HIV or other type of viral or bacterial infection for longer than would be expected. "Using the antibodies from these individuals to produce monoclonal antibodies is novel, intelligent and efficient," said Alcide Barberis, president and CEO of Humabs. Earlier this year, researchers at Humabs described a unique human monoclonal antibody, MPE8, in a letter to *Nature*[1]. This came shortly after the company reported in *Science*[2] the discovery of an antibody that neutralizes human and animal influenza viruses.

founded. "We are cloning memory B and plasma cells from individuals who have a particularly good immune response to specific pathogens or who survived severe infections," Corti said. Using this method, the most potent and efficacious antibodies are selected. What could work in theory proved to be highly efficacious both *in vitro* and *in vivo*. Antibodies selected using Humabs's platform technology have shown superior properties compared with antibodies obtained by other methods[1]. The approach provides a rapid and flexible method that enables a fast response to new infectious diseases. This has tremendous potential for fighting future public health threats. "It is adaptable to any human disease in which antibodies have a role, including cancer and

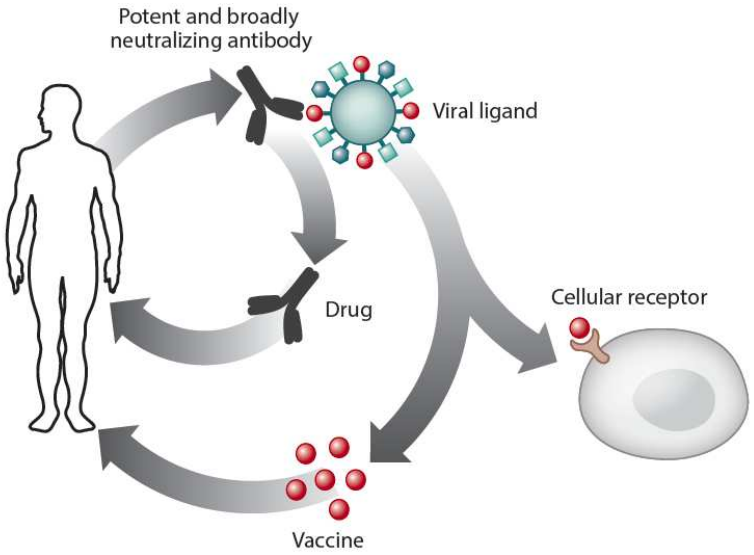


8

Nature BioPharma Dealmakers 2013

HUMABS BioMed

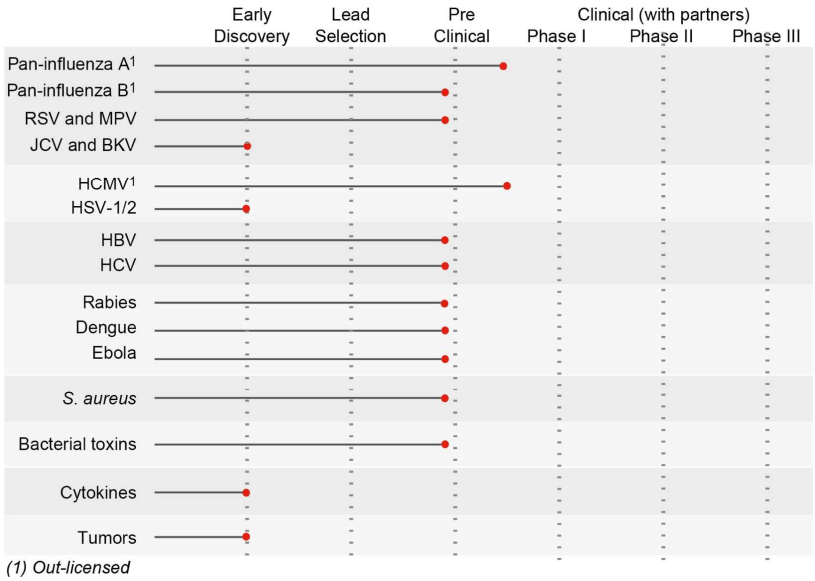
Cellclone Technologies: Applicazioni



9

HUMABS BioMed

Programmi e "Pipeline" di Humabs



(1) Out-licensed

10

HUMABS BioMed

Prospettive di Crescita per Humabs

Prospettive di crescita per Humabs:

- **Aumentare il numero dei contratti di licenza e collaborazione con ditte farmaceutiche per lo sviluppo clinico dei nostri prodotti**
- **Espandere l'attività di ricerca e sviluppo (R&D) applicando le nostre tecnologie ad altre aree terapeutiche come il cancro e le malattie autoimmuni e neurodegenerative**
- **Portare alcuni programmi a fasi di sviluppo più avanzate (es. "IND filing") creando così maggiore valore aggiunto**

- **Quindi, maggiori investimenti e aumento del personale dagli attuali 11 collaboratori a 25-30 nei prossimi tre anni**

11

HUMABS BioMed

L'Importanza delle "Spin-Off"

Uno degli obiettivi attuali e futuri dei grandi Istituti di ricerca in Svizzera e in altri Paesi industrializzati:

- **"<u>Sostenere la fondazione di spin-off</u> basate sui risultati della ricerca di base con gli obiettivi di "trasformare" questi risultati in prodotti commercializzabili e di <u>creare così posti di lavoro qualificati</u>."**

12

ETH zürich

Spin-offs

The company "Optotune" is an example for the many ETH spin-offs capturing the market with revolutionary ideas. In this case it's lenses which - thanks to artificial muscles - can focus faster than ever before.

Since the 1990s, ETH Zurich has been supporting the foundation of companies based on its research achievements. The objective is to turn such research results into marketable products and to create qualified jobs.

13

HUMABS BioMed

L'Importanza delle "Spin-Off": Esempi dalla Svizzera

ETH zürich

ETH Innovation und Entrepreneurship Lab (ieLab)

Encouraging and challenging bright, talented entrepreneurs and helping them along the path to success

The ieLab brings together talented young entrepreneurs from ETH Zurich, experienced figures from the business world and alliance partners from industry.

The ieLab cultivates a climate of innovation, exploration and translation. Talented young students with a flair for entrepreneurship are supervised, supported, encouraged and challenged by experienced coaches – who are successful serial entrepreneurs themselves – on their way to realising their entrepreneurial goals.

14

ETH zürich

Information for founders

Promotion programme – how does ETH Zurich support its spin-offs? Close –

Recognised ETH Zurich spin-offs will be supported by the following activities during their incorporation and the initial years after incorporation:

- **Consulting and advice:** ETH transfer will advise you about the first steps in founding a company. From the evaluation of the product to the decision about the form of the company, we will discuss your idea and seek a solution together.
- **Infrastructure:** During the first two years, ETH spin-offs may hire premises or equipment from ETH Zurich for shared use where capacity is available. In addition to ETH's own premises, we can also arrange the hire of premises and laboratories in Zurich's Technopark at discounted rates.
- **Contacts:** We can set up contacts in the fields of financing, taxes, law, consulting services, etc.

15

HUMABS BioMed

L'Importanza delle "Spin-Off": Esempi dalla Svizzera

SpinOff.ch

The Universities of Basel, Bern and Zurich welcome and support the establishment of spin-off companies as a means for effective technology transfer. They provide support by

- subsidizing educational seminars for entrepreneurs
- offering consulting services in defining the business idea and writing of the business plan
- providing pre-seed funding
- arranging contacts with appropriate investors
- renting space and infrastructure (if available) to spin-off companies in the first few years.

16

HUMABS BioMed

AlpTransit e il BIO-TECHNOPARK® Schlieren-Zurich

BIO-TECHNOPARK®
SCHLIEREN-ZÜRICH

Welcome at the BIO-TECHNOPARK® Schlieren-Zurich

The Swiss Federal Institute of Technology Zurich (ETH) and the University of Zurich are flagging up an impressive number of spin-off establishments in the Life Sciences. Experience shows that start-up firms locate in the vicinity of their particular knowledge base.

➢ **AlpTransit = Zurigo-Bellinzona in 1 ora e 30 minuti**

17

HUMABS BioMed

Humabs BioMed SA
Via Mirasole 1
6500 Bellinzona
Switzerland
www.humabs.com

Alcide Barberis, PhD
President and CEO
alcide.barberis@humabs.com

Davide Corti, PhD
Senior Vice President Research
davide.corti@humabs.com