

Research and Innovation action: TopSpec - 829157

Deliverable: D9.1

Logo and Website launch and public accessibility

“A project logo and website will be released and accessible for the public after 2 months. The website will be maintained and updated by Karolinska Institutet during the project.”

Content:

1. Strategy	Page 2
2. Logo	Page 3
3. Webpage	Pages 4 to 9
4. Maintenance	Page 10

Authors: Susanna Lundström, Roman Zubarev, Karolinska Institutet

Logo and Webpage Strategy

The logo and particularly the Webpage is a tool for the TopSpec dissemination and awareness strategy. For this reason the partners will ensure to:

- Acknowledge the logo and webpage address in public meetings and seminars.
- Include the TopSpec website address in project publications.

In order to keep visitors returning to the TopSpec website it will be essential to:

- Keep the site up-to-date (by updating it at least every second month).
- Make sure that all partners are using the website to communicate and share relevant documentation, news and events related to TopSpec.
- Allow use of the webpage for announcements, upcoming events, links etc. so that a visitor can immediately find new items.

General agreement on the webpage structure and on the information intended to be published:

The webpage is implemented with the support of all project partners, which will be continuously asked to provide their own contributions.

Communication with the audience:

Information will be provided and published in order to be understandable by the wide public without loss in their contents. The general public has the option to contact the main project partner via the webpage and can give comments and feedback directly in the News & Events section.

Logo:



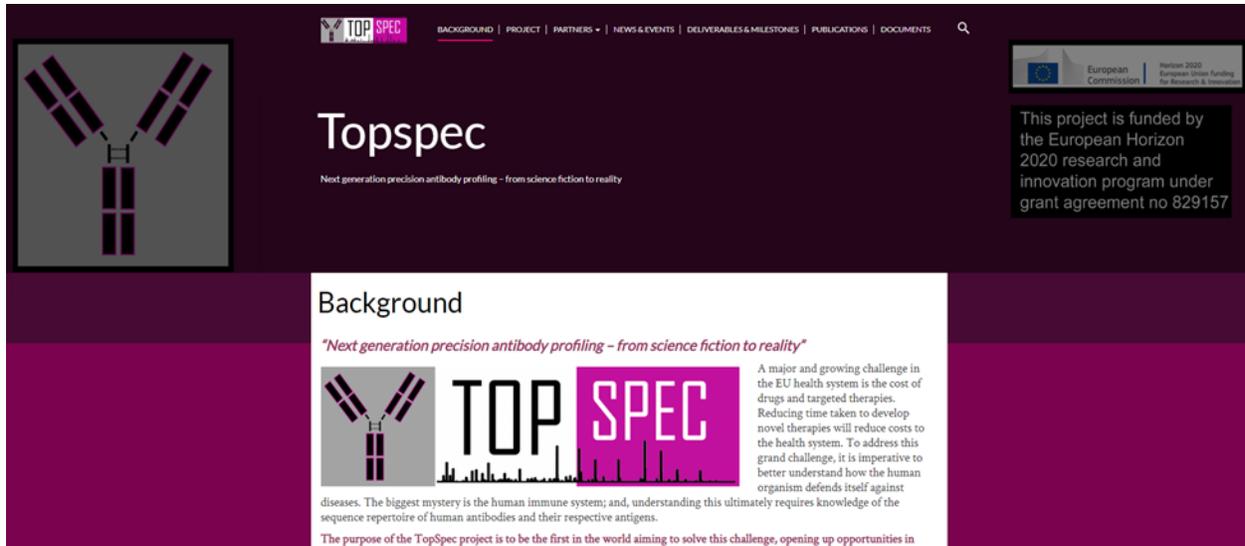
A project logo has been made and agreed upon by the consortium. It was first introduced to the public on the 1st European Top-Down Proteomics Symposium at Pasteur Institut, Paris, France on February 12th, 2019.



Webpage:

A project webpage for TopSpec has been made and launched (27/2-2019).

The project website domain is: <http://topspec.ki.se>



Topspec
Next generation precision antibody profiling – from science fiction to reality

Background

"Next generation precision antibody profiling – from science fiction to reality"

A major and growing challenge in the EU health system is the cost of drugs and targeted therapies. Reducing time taken to develop novel therapies will reduce costs to the health system. To address this grand challenge, it is imperative to better understand how the human organism defends itself against diseases. The biggest mystery is the human immune system; and, understanding this ultimately requires knowledge of the sequence repertoire of human antibodies and their respective antigens.

The purpose of the TopSpec project is to be the first in the world aiming to solve this challenge, opening up opportunities in

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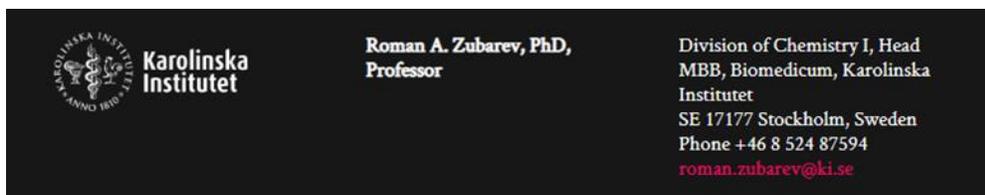
All pages contain an acknowledgement to the Horizon 2020 funding



European Commission | Horizon 2020
European Union funding
for Research & Innovation

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All pages also has a contact foot note:



 **Karolinska Institutet**

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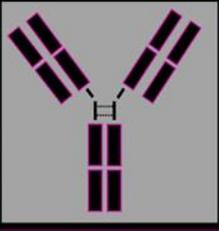
The site currently includes these sections:

BACKGROUND
PROJECT
PARTNERS
NEWS&EVENTS
DELIVERABLES&MILESTONES
PUBLICATIONS
DOCUMENTS

BACKGROUND | PROJECT | PARTNERS ▾ | NEWS & EVENTS | DELIVERABLES & MILESTONES | PUBLICATIONS | DOCUMENTS

Background:

Background and aim of the project.



Background

"Next generation precision antibody profiling - from science fiction to reality"



A major and growing challenge in the EU health system is the cost of drugs and targeted therapies. Reducing time taken to develop novel therapies will reduce costs to the health system. To address this grand challenge, it is imperative to better understand how the human organism defends itself against diseases. The biggest mystery is the human immune system; and, understanding this ultimately requires knowledge of the sequence repertoire of human antibodies and their respective antigens.

The purpose of the TopSpec project is to be the first in the world aiming to solve this challenge, opening up opportunities in medical research and drug development that are today only dreamt about. We will create a breakthrough technology that will revolutionize academic, clinical and industrial proteomics and dramatically advance the development of new generation antibody- and protein-based therapeutics.

Antibodies are the most sophisticated line of natural defence against disease. Knowing which antibodies are produced in response to a given disease enables us not only to better understand the disease cause but also to provide next-generation cures in form of personalized therapeutic antibodies. The limiting factor for this to truly be achieved is to find a way to sequence large molecules in the gas phase, and this represents a formidable challenge.

The TopSpec project will develop a ground-breaking TOP-down tandem mass Spectrometry (MS/MS) platform. One major innovation is the novel radical gas-phase ion-electron and ion-atom reactions. Another "killer innovation" is the method to greatly simplify MS/MS spectra of large molecules by adding another dimension of separation - collisional cross-sections of fragment ions, using two parallel innovative approaches. TopSpec will pioneer the deconvolution of massively overlapping isotopic clusters, solving one of the greatest challenges in top-down MS/MS of large molecules, the analysis of protein variants (proteoforms).

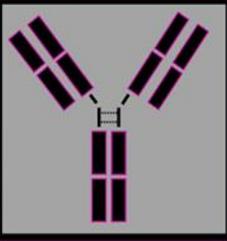
In this project, key experts in radical-assisted sequencing of proteins team up with the best developers in ultrahigh-resolution MS and MS/MS, as well as top European scientists in online protein separation and MS data processing. Achieving the seemingly impossible, we plan to create, test and validate a seamless platform capitalizing on our ground-breaking innovations, enable scientists from academia and industry to explore the antibody repertoire, enhancing our ability to explore new effective cures for major global diseases.



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Project:

Brief project description.



Project

TopSpec – The most sophisticated platform for top-down analysis of intact proteins.

We envision an unique instrumental platform that combines novel fragmentation methods in MS/MS with ion mobility and a truly innovative ion deconvolution approach, as well as the best achievements in front-end separation merged with ultrahigh-resolution MS (Figure). This will allow us to achieve the elusive 100% sequence coverage in top-down analysis of human Abs.

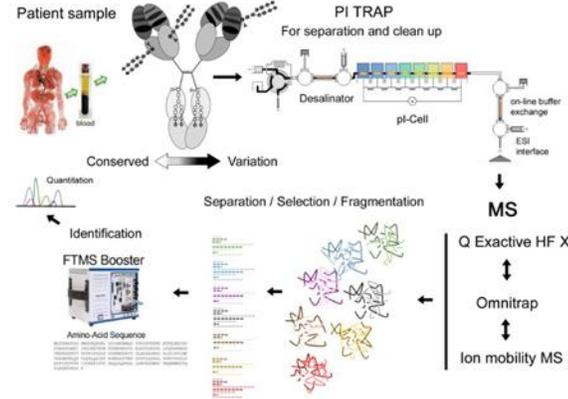


Figure. TopSpec design. pi-Trap online pi fractionator (BM), incl. desalinator, capillary-isoelectric focusing, online buffer exchanger and ESI interface; modified Q-Exactive HF X ultra-high-resolution FT mass spectrometer (TF); Omnitrap – all-inclusive MS/MS device for protein sequencing (FASM, KI); ion mobility set-up (FASM) and FTMS Booster – high-performance data acquisition and real-time big data processing system (SPS).

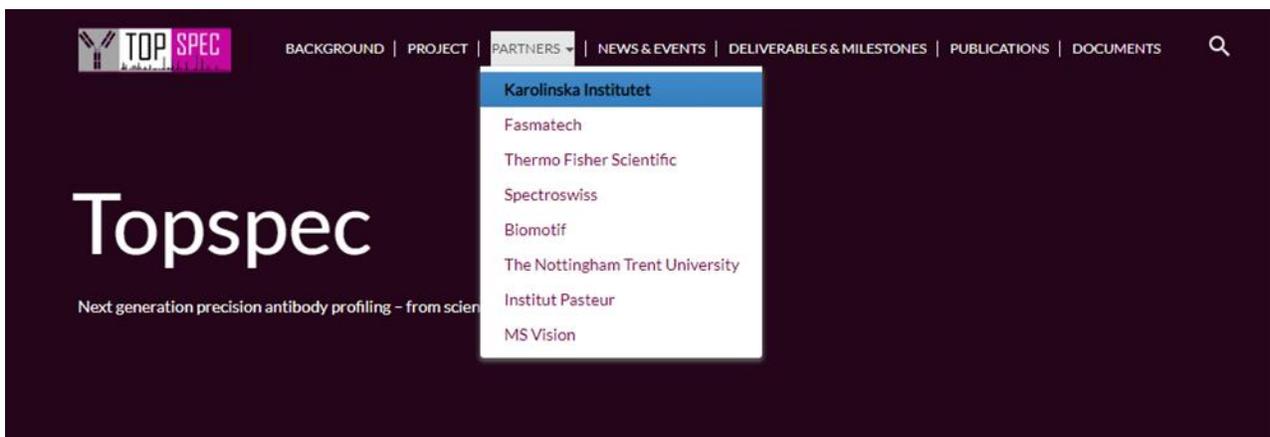
1. The antibodies will be enriched from human blood (KI, IP), and intact Ab molecules will be loaded into the pi-Trap, which is a new innovative micropreparative device that has been developed by Biomotif (BM). Upon desalting in an online desalinator, pi-Trap will separate Abs by their isoelectric point (pI) in solution. After on-line buffer exchange, they are



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Partners:

Brief descriptions of all partners, including the key person(s) within the project and what their main role within TopSpec will be.

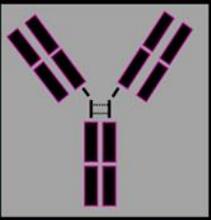


The screenshot shows the TopSpec website with a navigation menu. The 'PARTNERS' menu is open, listing the following partners:

- Karolinska Institutet
- Fasmatech
- Thermo Fisher Scientific
- Spectroswiss
- Biomotif
- The Nottingham Trent University
- Institut Pasteur
- MS Vision

The website header includes: TOP SPEC, BACKGROUND | PROJECT | PARTNERS | NEWS & EVENTS | DELIVERABLES & MILESTONES | PUBLICATIONS | DOCUMENTS. The main content area features the TopSpec logo and the tagline: 'Next generation precision antibody profiling - from science to clinical practice'.

Example: Karolinska Institutet



Karolinska Institutet

Karolinska Institutet, Stockholm/ Sweden (www.ki.se) is one of the world's leading medical universities. KI accounts for over 40 percent of the medical academic research conducted in Sweden and offers the country's broadest range of education in medicine and health sciences. Since 1901, the Nobel Assembly at Karolinska Institutet has selected the Nobel laureates in Physiology or Medicine. KI has several campuses in different areas of Stockholm.

The Department of Medical biochemistry and Biophysics (MBB) is one of the largest of KI's 20 departments, with 18 full professors, and is one of the academically most successful (three Nobel prize laureates have worked here). MBB has the oldest mass spectrometry facility in biomedical sciences in Europe and the second oldest in the world, which opened its doors for service in 1947. Today the mass spectrometry facility has 9 operational mass spectrometers, including six high-resolution Orbitrap mass analyzers. The research activities of the laboratory have a broad scientific scope, including method development for proteomics.

Key person within TopSpec:





Karolinska Institutet

Roman A. Zubarev, PhD is a full professor, chair and director of the Chemistry I division at MBB at the Karolinska Institutet, Sweden.

Prof Roman A. Zubarev studied applied physics at Moscow Engineering Physics Institute where he obtained his Masters' degree. He earned his PhD from the Uppsala University, Sweden in the field of Ion Physics and did his postdoctoral training in Fred McLafferty's lab at Cornell University, United States. He became associate professor of biological mass spectrometry in Odense, Denmark in 1998, before moving back to Uppsala in 2002 as a professor of proteomics. In 2008, he accepted KI's offer and moved to Stockholm. He has a broad research interest. He has discovered Electron capture dissociation (ECD) (1997) and other ion-electron reactions (1998-2008) for the analysis of polypeptides by mass spectrometry. He formulated the Isotopic Resonance hypothesis of the origin of terrestrial life (2008); experimentally verified the Isotopic Resonance phenomenon (2011-2014), and formulated the Isoaspartate hypothesis of the origin of Alzheimer's disease (2011), as well as developed the "pI=7.4" method of biomarker discovery. His current research includes developing mass spectrometry based tools for studying disease mechanisms and developing novel proteomics tools.

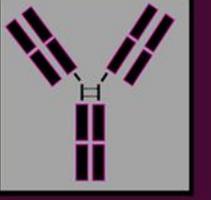
Main Tasks in TopSpec:



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News & Events:

This page will be frequently updated with news and events involving the project. In this section the public can leave comments under each article.



First TopSpec announcement – 1st European Top-Down Proteomics Symposium

Posted on 19 February, 2019; updated on 20 February, 2019 by Susanna Lundblom

1st European Top-Down Proteomics Symposium – February 12th and 14th 2019, Institut Pasteur, Paris, France

This successful event, was jointly organized by Julia Chamot-Rooke (Institut Pasteur, TopSpec Consortium Partner) and The Consortium for Top-Down Proteomics.

The symposium was focused on top-down proteomics, the analysis of intact proteins and protein complexes using high-resolution mass spectrometry. The symposium was attended by several TopSpec Consortium Partners; Julia Chamot-Rooke, Alexander Makarov, Yuri Tsybin and Jan Commandeur as well as representatives from Karolinska Institutet and Fasmatech.

During the meeting, world-leading experts in top-down proteomics (among those Dr. Chamot-Rooke, Dr. Makarov and Dr. Tsybin) were presenting advances in technologies and approaches within the field. A wide range of topics was covered including the latest developments in instrumentation, sample preparation both in denaturing and native conditions, intact protein fractionation/separation, data analysis as well as applications in life sciences and human health. Additionally, attendees were engaged in discussions on the future directions, challenges, and opportunities for top-down proteomics.

During one of the sessions Julia Chamot-Rooke announced the TopSpec initiative.



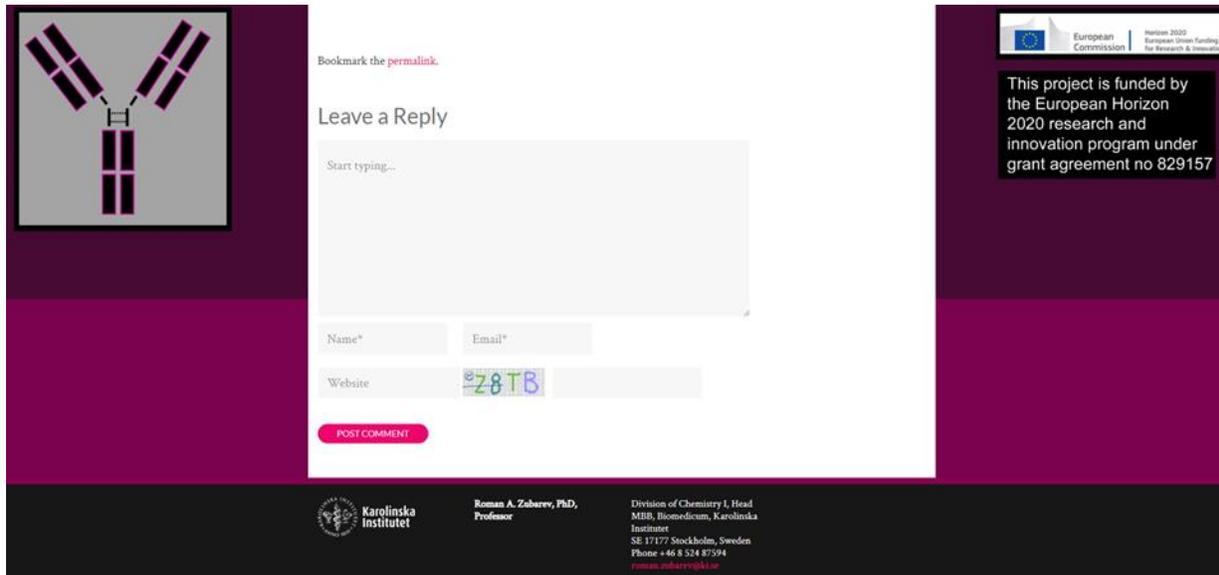
Latest News

First TopSpec announcement – 1st European Top-Down Proteomics Symposium



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Comment section:



Bookmark the [permalink](#).

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Start typing...

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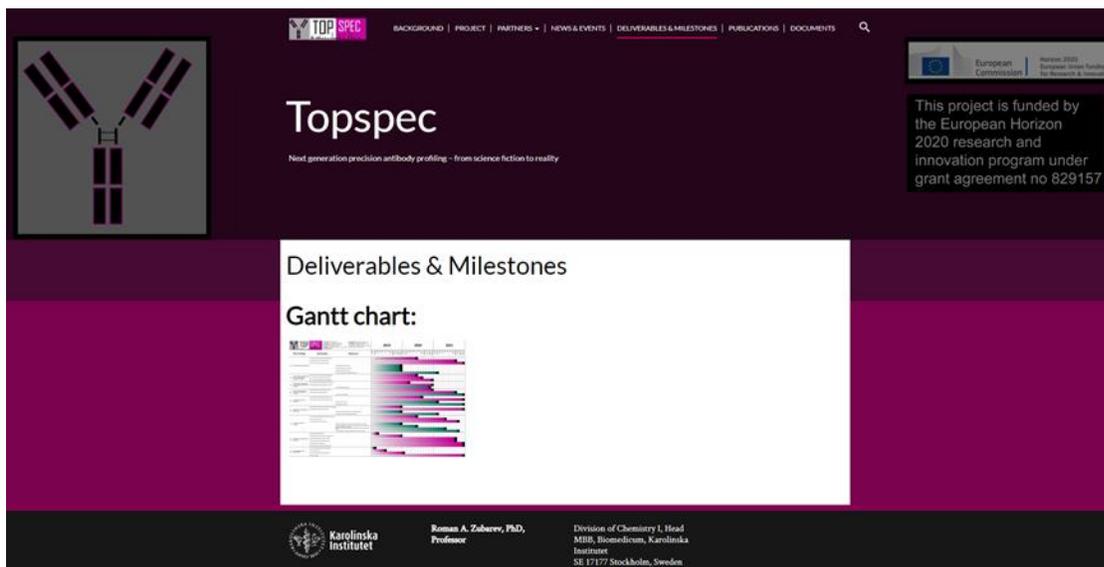
 **Karolinska Institutet**

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Deliverables & Milestones

We aim to keep this webpage both as a page for the public but also for the partners. The Deliverables & Milestones page will be updated along with the Deliverables & Milestones deadlines.



 BACKGROUND | PROJECT | PARTNERS | NEWS & EVENTS | **DELIVERABLES & MILESTONES** | PUBLICATIONS | DOCUMENTS

Topspec

Next generation precision antibody profiling - from science fiction to reality

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Deliverables & Milestones

Gantt chart:



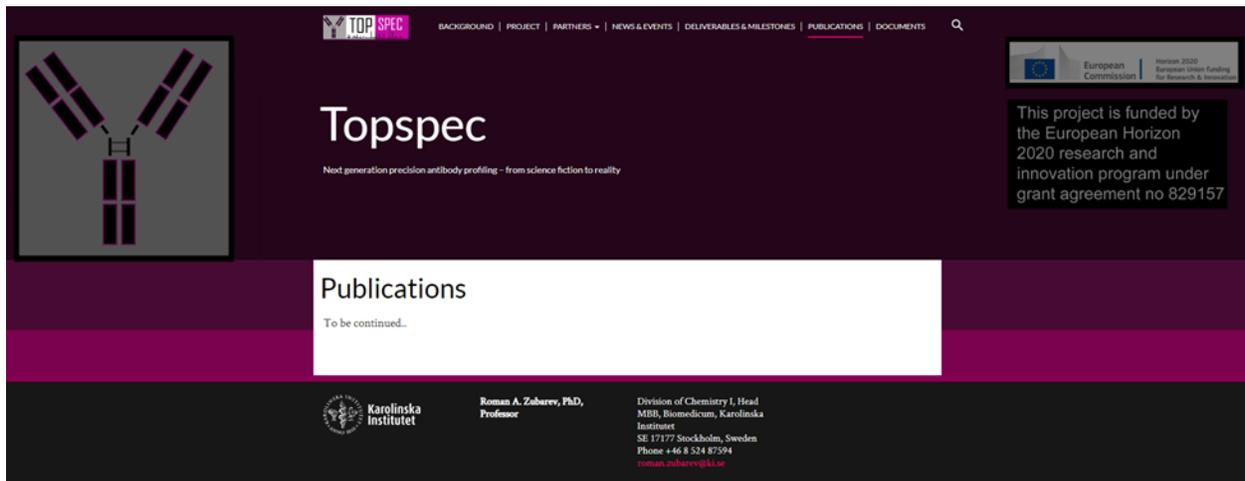
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Publications

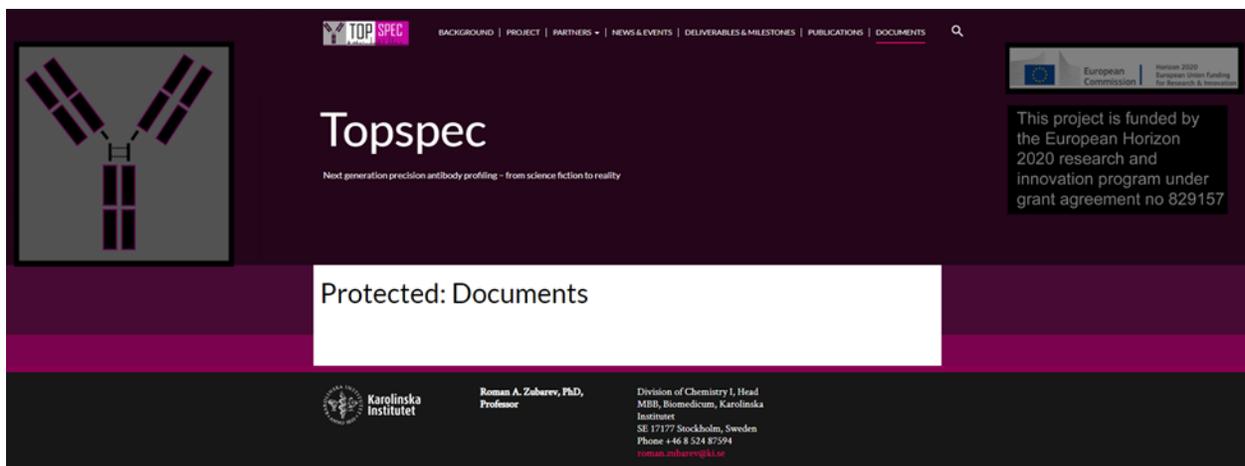
On this page publications generated from the project will be listed and linked to.



The screenshot shows the TopSpec website with the 'Publications' section highlighted. The page features a dark purple header with the 'TOP SPEC' logo and navigation links: BACKGROUND | PROJECT | PARTNERS | NEWS & EVENTS | DELIVERABLES & MILESTONES | PUBLICATIONS | DOCUMENTS. A search icon is also present. On the left, there is a graphic of an antibody structure. The main content area displays 'Topspec' and the tagline 'Next generation precision antibody profiling - from science fiction to reality'. Below this, the 'Publications' section is shown with the text 'To be continued..'. On the right, a box states: 'This project is funded by the European Horizon 2020 research and innovation program under grant agreement no 829157'. The footer includes the Karolinska Institutet logo and contact information for Roman A. Zubarev, PhD, Professor, Division of Chemistry I, Head MBB, Biomedicum, Karolinska Institutet, SE 17177 Stockholm, Sweden, Phone +46 8 524 87594, and email roman.zubarev@ki.se.

Documents:

Page only accessible to the partners (password protected). Documents such as the grant agreement and consortium agreement will be uploaded to this section.



The screenshot shows the TopSpec website with the 'Protected: Documents' section highlighted. The layout is identical to the previous screenshot, but the 'Publications' section is replaced by a white box containing the text 'Protected: Documents'. The rest of the page, including the header, navigation, antibody graphic, tagline, funding information, and footer, remains the same.

Webpage maintenance:

The webpage will be frequently updated, especially the News & Events, Deliverables & Milestones as well as Publications sections. Regular request emails will be sent to all partners for news and publications.

Social media:

Project partners are encouraged to share the project website content with their social media networks (LinkedIn, Facebook, Twitter, Research gate etc.). This social media sharing strategy works well for disseminating the project information to the general public.