Software for Business Intelligence

BizInt Smart Charts

Patents & IP Sequences | Clinical Trials | Drug Pipelines

Building Patent Reports from Orbit.com and GenomeQuest

BizInt Smart Charts eLearning Webinar

27 May 2020

John Willmore, VP Product Development

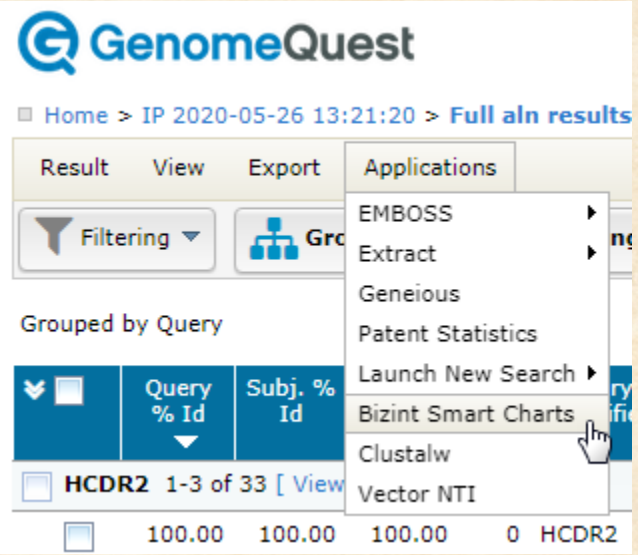
www.bizint.com

Today's Agenda

- Creating reports from GenomeQuest
- Transferring publication numbers to Orbit
- Combining reports
- Identify Common Patent Family
- Reference Rows
- Creating a Summary Table of Sequence Hits
- Exports, including Summary Records

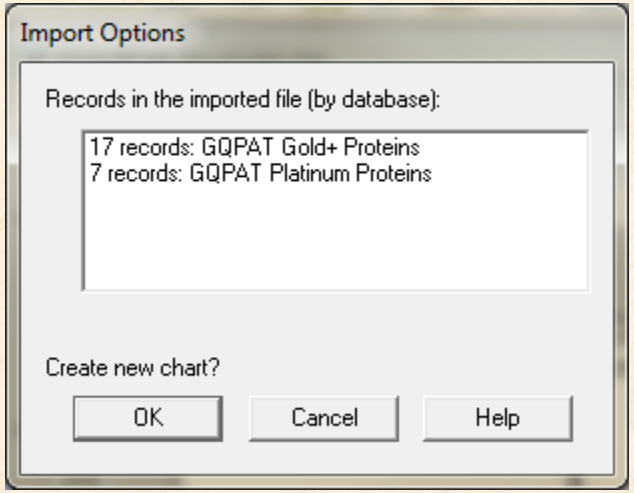
IP Sequences on GenomeQuest

- GQPAT
- GeneSeq
- CAS Biosequences (new in version 5.3.2)
- Use the BizInt application to export
- Discovery Browser export available (beta)



Improvements to GenomeQuest Exports

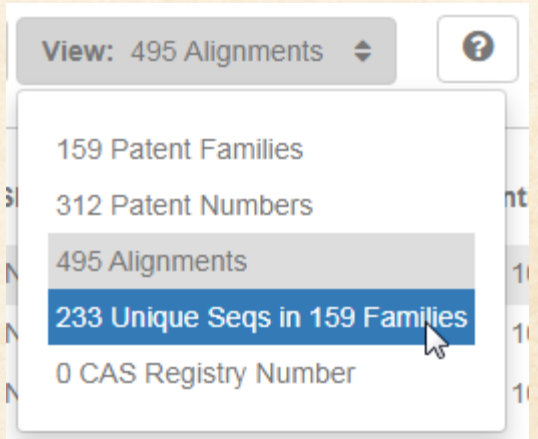
- Filters and selections now carry over to exports



BizInt exports now available in Discovery Browser

- Great way to refine your results before export
- Filter to only claimed sequences

- Reduce results to unique family sequences



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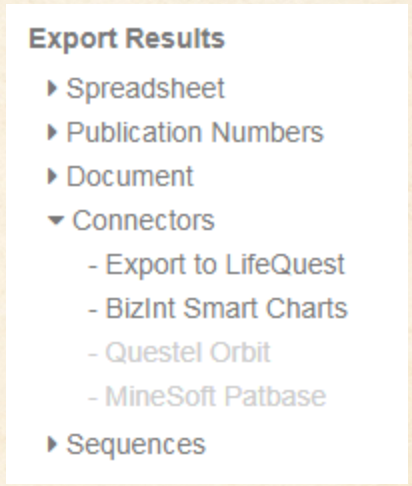
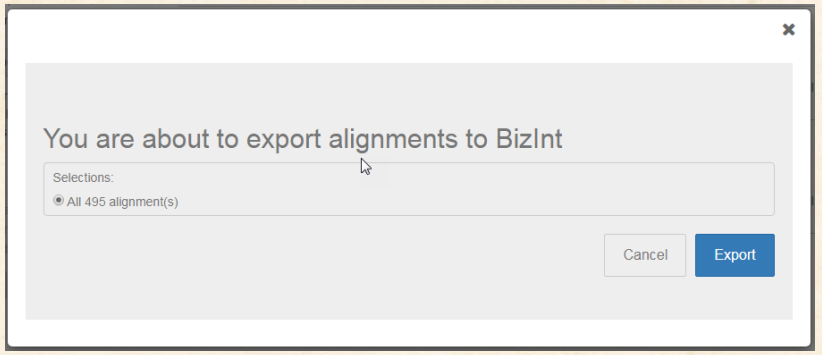
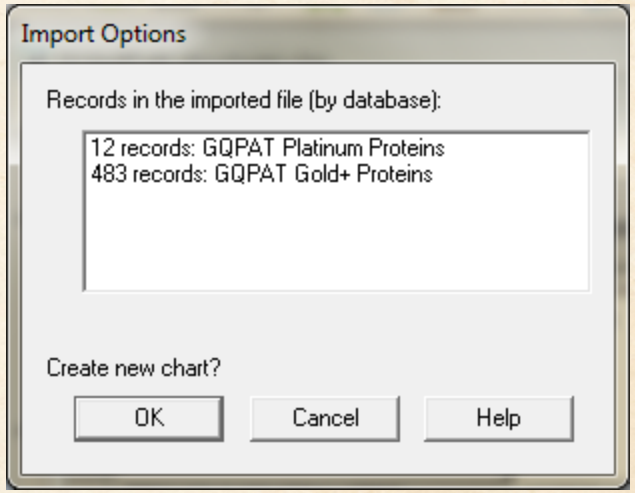
BizInt exports now available in Discovery Browser

- BizInt Smart Charts connector is available today in a beta version of Discovery Browser







Three Classes of Content in GQPAT

- Bibliographic data (title, family, inventors)
- Sequence data (sequence, organism, location)
- Query data (alignment, query ID, pct. Identity)

GQPAT Content in BizInt Smart Charts

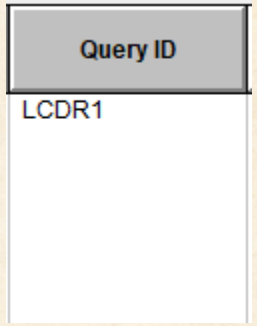
Ebola Antibodies (May 2020)

	Title	Query ID	Patent Family			Patent Assignee	Inventor(s)	Alignment	Claimed Seq ID	Seq. ID Num
			Patent	Kind	Date					
1	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	HCDR2	US20200040065 CN110087677 EP3525813 WO2018071345		20200206	INTEGRATED BIOTHERAPEUTICS, INC.; THE UNIVERSITY OF MARYLAND	AMAN MOHAMMAD JAVAD HOWELL KATIE A HOLTSBERG FREDERICK WAYNE ZHAO XUELIAN LI YUXING	Q: 1 GNIDNSASTNYNPSLKT 17 S: 1 GNIDNSASTNYNPSLKT 17	1-10	US20200040065
2	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	HCDR2	WO2018071345 CN110087677 EP3525813 US20200040065		20180419	INTEGRATED BIOTHERAPEUTICS; UNIVERSITY OF MARYLAND	AMAN, Mohammad Javad HOWELL, Katie A. HOLTSBERG, Frederick Wayne ZHAO, Xuelian LI, Yuxing	Q: 1 GNIDNSASTNYNPSLKT 17 S: 1 GNIDNSASTNYNPSLKT 17	1-15 17 20-27	WO2018071345
3	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	HCDR2	US20200040065 CN110087677 EP3525813 WO2018071345		20200206	INTEGRATED BIOTHERAPEUTICS, INC.; THE UNIVERSITY OF MARYLAND	AMAN MOHAMMAD JAVAD HOWELL KATIE A HOLTSBERG FREDERICK WAYNE ZHAO XUELIAN LI YUXING	Q: 17 S: 50 GNIDNSASTNYNPSLKT 66	1-10	US20200040065
4	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	HCDR2	WO2018071345 CN110087677 EP3525813 US20200040065		20180419	INTEGRATED BIOTHERAPEUTICS; UNIVERSITY OF MARYLAND	AMAN, Mohammad Javad HOWELL, Katie A. HOLTSBERG, Frederick Wayne ZHAO, Xuelian LI, Yuxing	Q: 1 GNIDNSASTNYNPSLKT 17 S: 50 GNIDNSASTNYNPSLKT 66	1-15 17 20-27	WO2018071345
5	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	LCDR3	US20200040065 CN110087677 EP3525813 WO2018071345		20200206	INTEGRATED BIOTHERAPEUTICS, INC.; THE UNIVERSITY OF MARYLAND	AMAN MOHAMMAD JAVAD HOWELL KATIE A HOLTSBERG FREDERICK WAYNE	Q: 1 QQHNTLPLT 9 S: 1 QQHNTLPLT 9	1-10	US20200040065

New Content

Multi-query searches on GenomeQuest

- Query labels are available in the QueryID column e.g. LC, LCDR1/2/3…

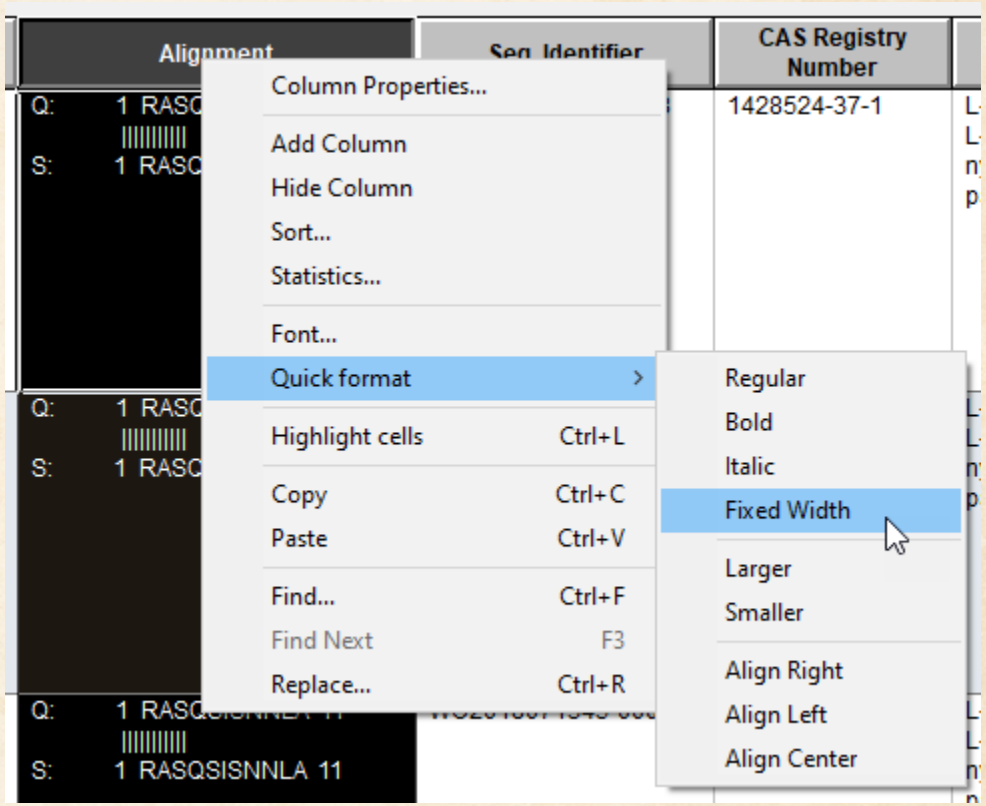


- If you run each query as a separate search, fill the Query ID in each chart by selecting the column and pasting in the new value.
- Then combine.

Formatting for Alignments

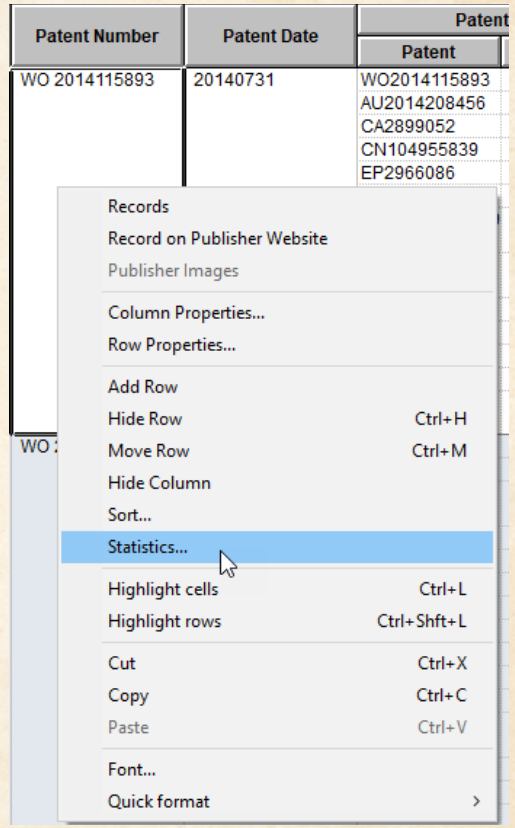
- Choose the Fixed Width option for Quick Format
- Don’t just change the font for the column … that looks ok in BizInt Smart Charts, but loses spaces when exported!

Alignment
Q: 1 RASQSISNNLA 11 ||||||||||| S: 1 RASQSISNNLA 11



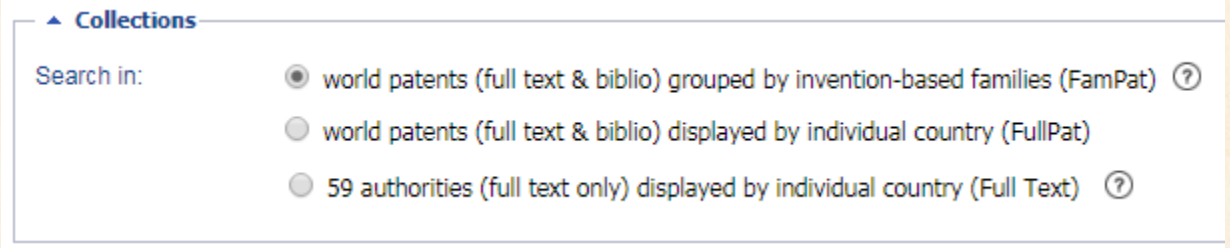
Transferring publication numbers to Orbit

- In a small set like this, collect all publication numbers
- Tools | Statistics creates an Excel sheet
- Copy the publication numbers
- An alternative that works with Orbit is to simply Copy the Patent Number column
- Paste the numbers into Orbit's "Number Search" panel



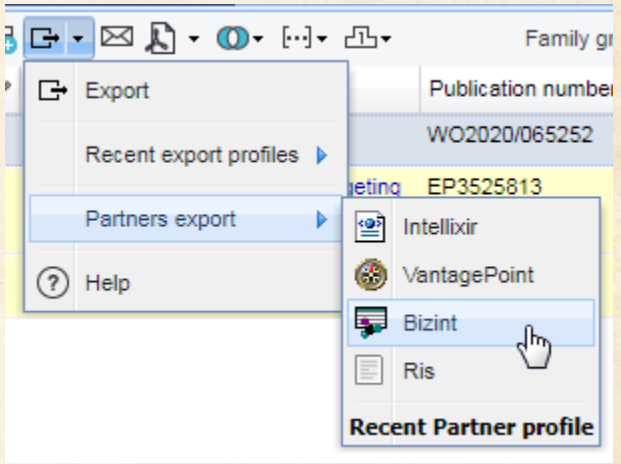
Searching Orbit Collections

- BizInt Smart Charts supports all three search collections on Orbit.com:
- Family (FAMPAT)
- Publication (FULLPAT)
- Full Text (definitions updated in 5.3.2)



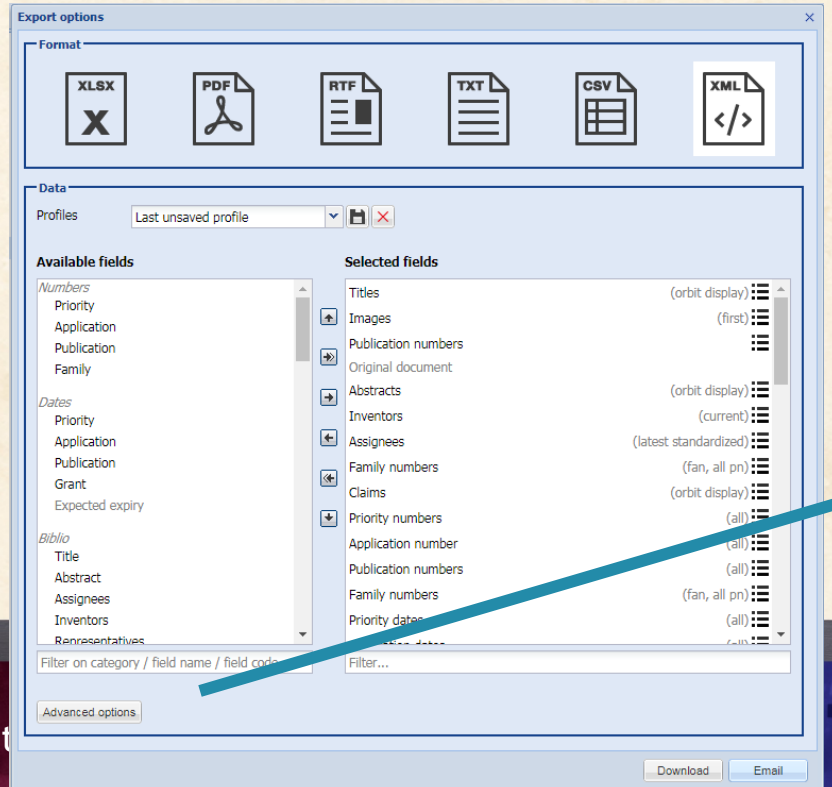
Exporting from Orbit

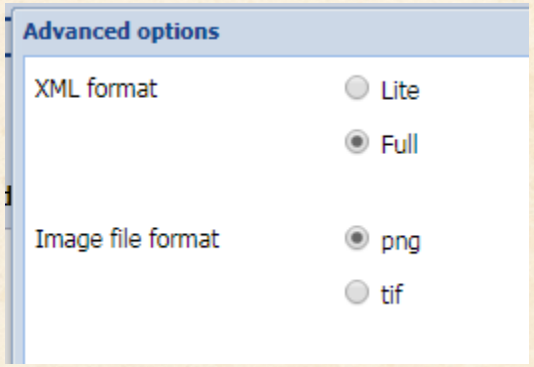
- There are two ways to export results from Orbit
- Easiest is the BizInt partner export
- Standard set of bibliographic and status data
- Independent Claims only



Exporting from Orbit - XML option

- You can select fields using Export and XML format
- Make sure you include family number (FAN)
- Allows you to choose full claims





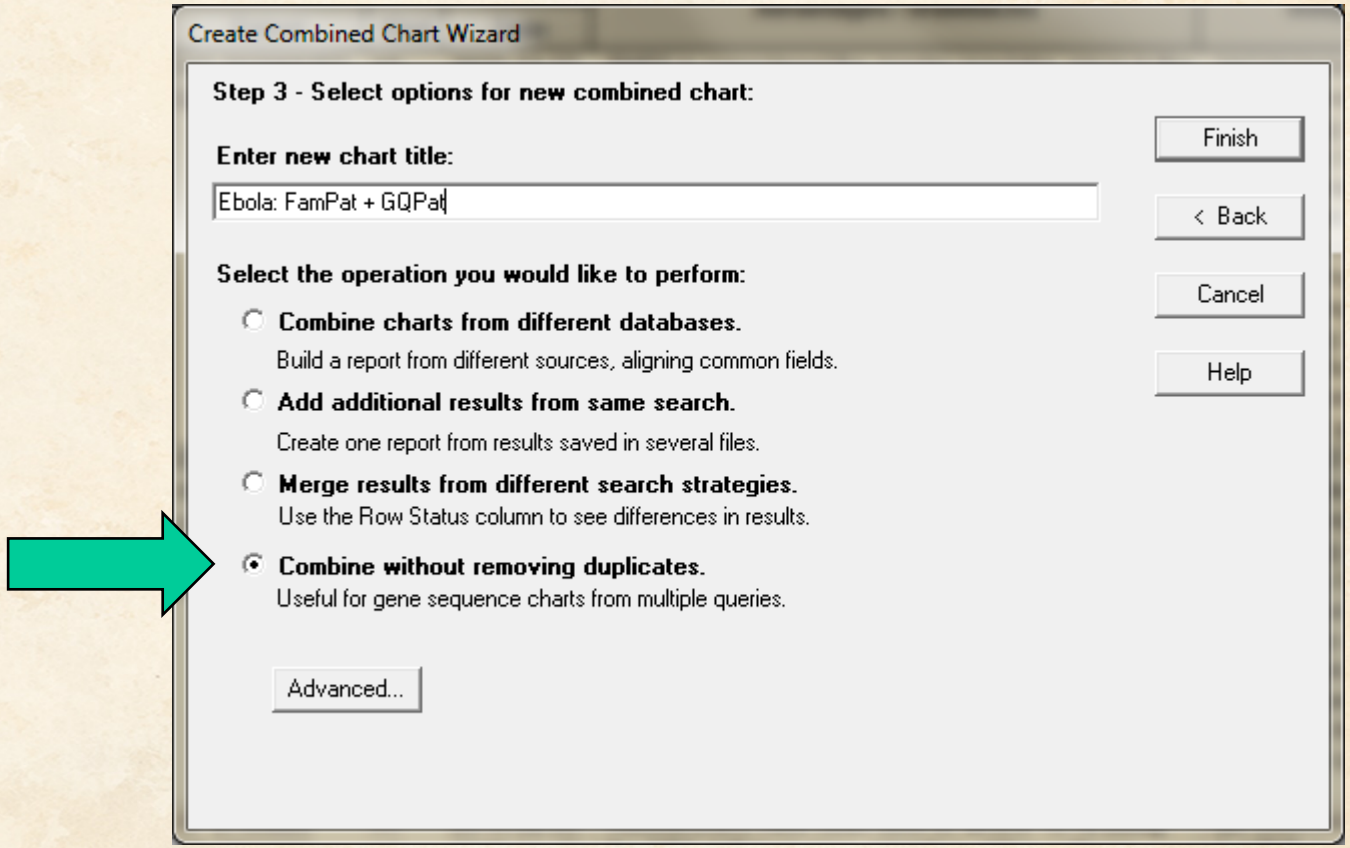
Orbit - export results, Family Status, Normalized Assignee

- Creating Reports from Databases and Hosts for instructions on each platform

Independent Claims	Family Status				Family Patent Assignee Normalized
	Pub No.	State	Status	Expiry	
(WO2020/065252) 1. An antibody or fragment comprising a binding site which specifically binds to Bone Morphogenetic Protein 6 (BMP6), wherein the binding site comprises a VH domain, wherein the VH domain comprises a CDRH3 sequence of a VH domain comprising SEQ ID NO: 114. 38. An antibody, fragment, combination, vector, host cell, use or method as herein described.	WO 202065252 A1	ALIVE	PENDING	2022-03-25	KYMAB
	GB 201815629 D0	DEAD	LAPSED	2020-03-25	
(WO2018/071345) 1. An isolated antibody or antigen-binding fragment thereof comprising a binding domain that specifically binds to an orthologous epitope in the internal fusion loop of an ebolavirus glycoprotein, wherein the binding domain specifically binds to the epitope on two or more ebolavirus species or strains.	EP 3525813 A1	ALIVE	PENDING	2037-10-09	INTEGRATED BIOTHERAEPUTICS UNIVERSITY OF MARYLAND
	WO 201871345 A1	DEAD	LAPSED	2020-04-11	
	US 20200040065 A1	ALIVE	PENDING	2037-10-09	
	CN 110087677 A	ALIVE	PENDING	2037-10-09	
(EP3495389) 1. A TNF-like ligand 1a (TL 1a)	EP 2760889 A1	DEAD	LAPSED	2018-10-09	TEVA PHARMACEUTICALS
	EP 3495389 A1	ALIVE	PENDING	2032-09-28	

Combine Charts

- Both charts open
- File | Combine



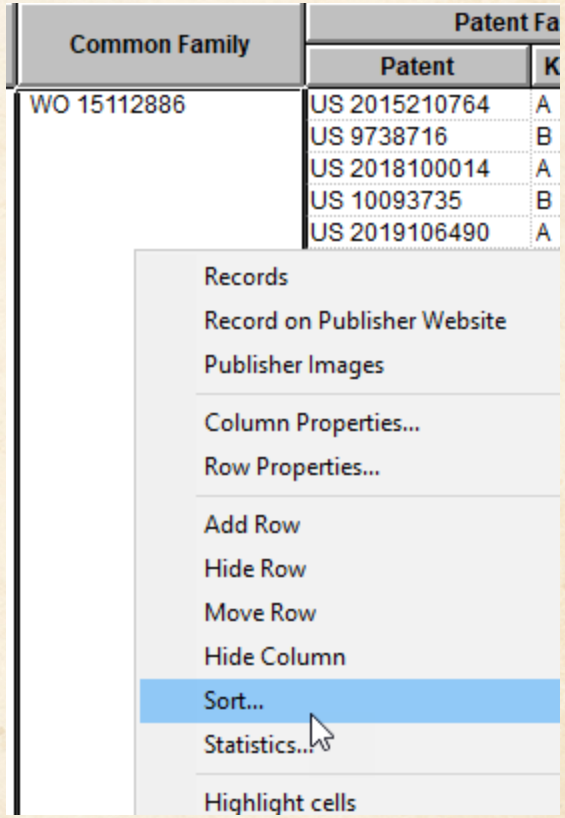
Match records by Tools | Identify Common Patent Families

- Links rows in the chart based on publication numbers in families
- Remember:
  Common Family is a sort key

Database	Common Family	Patent Family		
		Patent	Kind	Date
Derwent World Patents Index	US 2014356956	US20140356959	A1	20141204
Derwent World Patents Index	US 2014356956	US20140356956	A1	20141204
		[illegible]	A2	20141211
		WO2014197568	A3	20150312
		CA2914638	A1	20141211
FAMPAT	US 2014356956	~~US 2014356956~~	A1	2014-12-04
		~~US 2014356959~~	A1	2014-12-04
		[illegible]	B2	2016-02-23
GQPAT Gold+ Proteins	US 2014356956	US20140356959		20141204
GQPAT Gold+ Proteins	US 2014356956	US20140356956		20141204
PatBase	US 2014356956	US 2014356959	A	2014-12-04
		US 2014356956	A	2014-12-04
		AU 2014274939	AA	2014-12-11
		WO 14197568	A2	2014-12-11
		WO 14197568	A3	2015-03-12
		CA 2914638	AA	2015-12-04
		KR 20160014036	A	2016-02-05

Common Patent Family

- Remember that Common Family is simply a sort key
- You can edit the assigned values
- You can paste another field into Common Family
- Patent Number – group by publication
- Sequence ID – group by sequence



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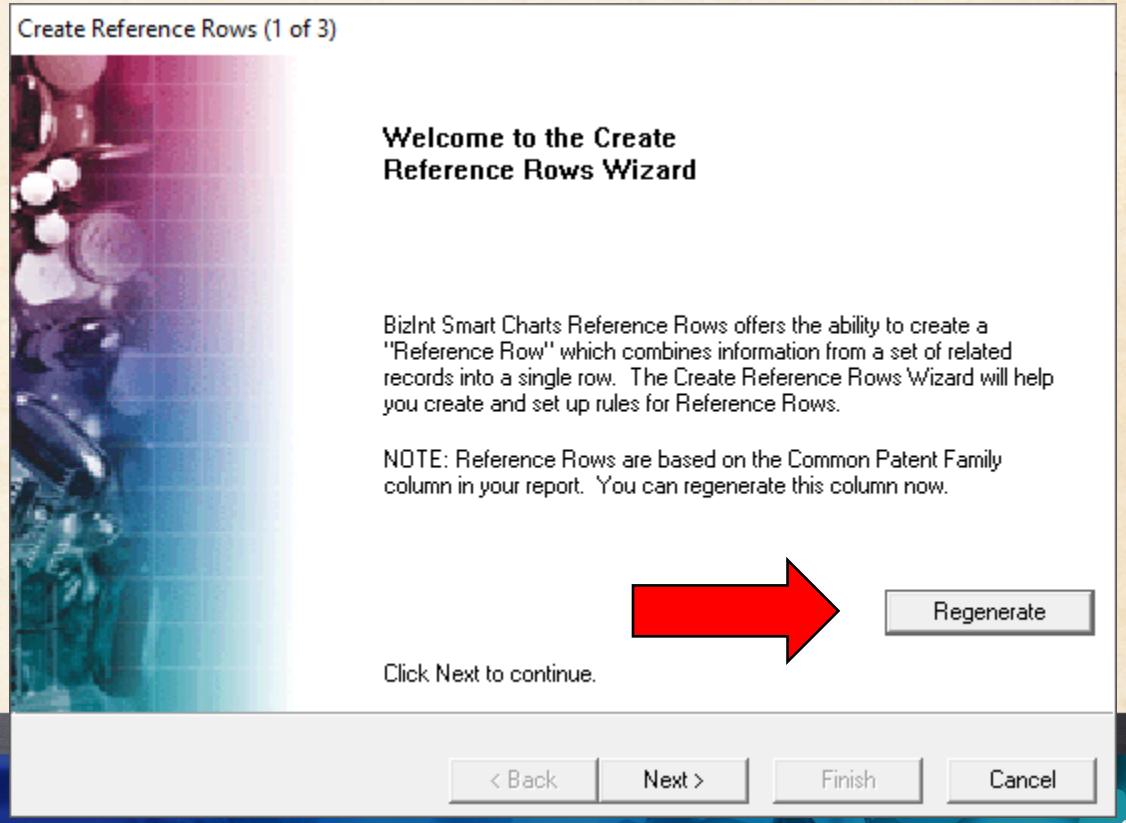
Send to Reference Rows

- Save the combined chart first
- File | Send to Reference Rows
- On the first step of the wizard, do NOT select “Regenerate” if you have modified Common Family



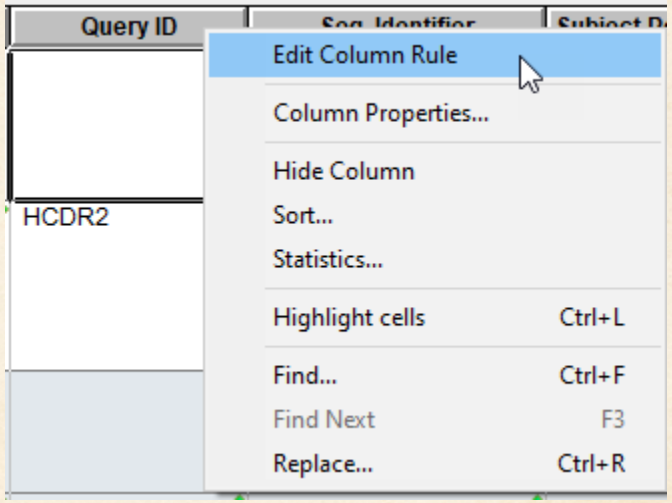
Standard behavior - fill in the blanks

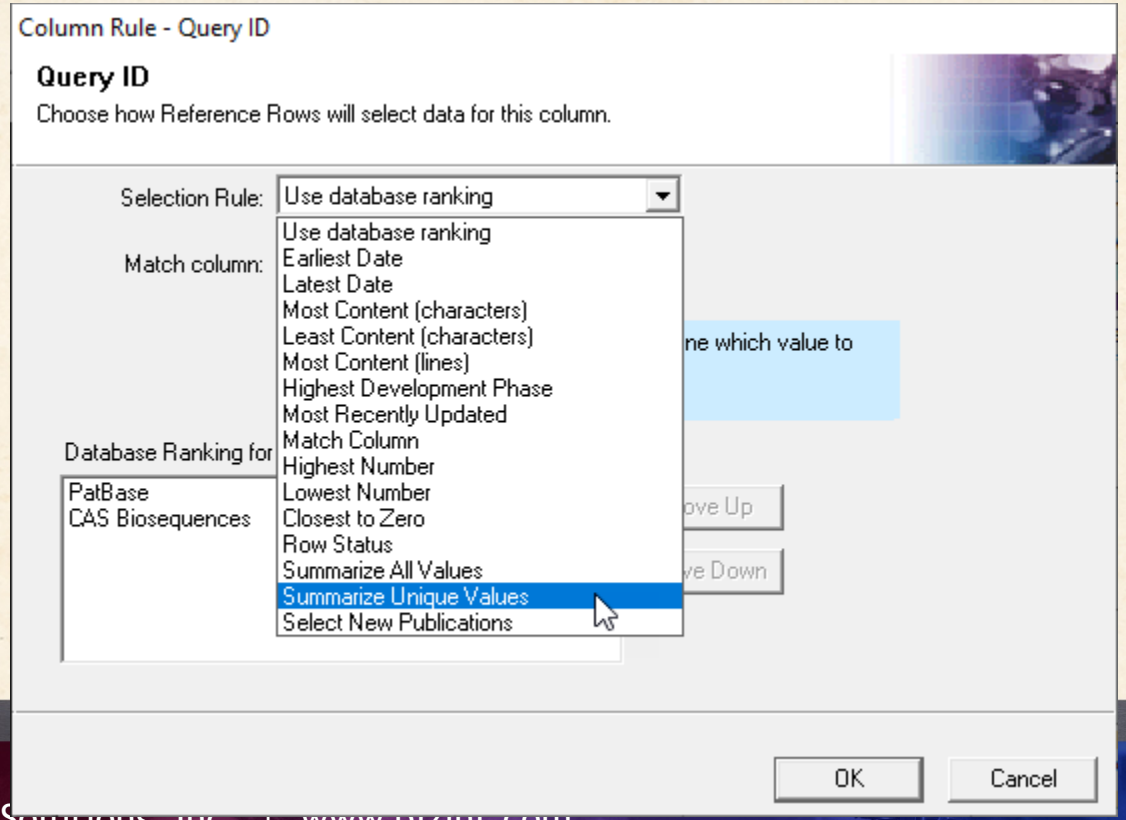
- Check marks show representative values for each group

2.1	Broadly neutralizing antibody targeting the ebolavirus glycoprotein internal fusion loop ✓	EP 3525813 ✓	FAMPAT	INTEGRATED BIOTHERAEPUTICS UNIVERSITY OF MARYLAND ✓	EP 3525813 A1 WO 201871345 A1 US 20200040065 A1 CN 110087677 A	ALIVE DEAD ALIVE ALIVE	PENDING LAPSED PENDING PENDING	2037-10-09 ✓ 2020-04-11 2037-10-09 2037-10-09			
2.2	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	EP 3525813	GQPAT Gold+ Proteins						HCDR2 ✓	Q: S:	1 GNIDNSASTNYN 1 GNIDNSASTNYN
2.3	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	EP 3525813	GQPAT Gold+ Proteins						HCDR2	Q: S:	1 GNIDNSASTNYN 1 GNIDNSASTNYN
2.4	Wide neutralizing antibodies targeted to internal fusion rings of Ebola virus glycoproteins	EP 3525813	GQPAT Platinum Proteins						HCDR2	Q: S:	1 GNIDNSASTNYN 1 GNIDNSASTNYN
2.5	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	EP 3525813	GQPAT Gold+ Proteins						LCDR3	Q: S:	1 QQHNTLPLT 1 QQHNTLPLT
2.6	BROADLY NEUTRALIZING ANTIBODY TARGETING THE EBOLAVIRUS GLYCOPROTEIN INTERNAL FUSION LOOP	EP 3525813	GQPAT Gold+ Proteins						LCDR3	Q: S:	1 QQHNTLPLT 1 QQHNTLPLT
2.7	Wide neutralizing antibodies targeted to internal fusion rings of Ebola virus glycoproteins	EP 3525813	GQPAT Platinum Proteins						LCDR3	Q: S:	1 QQHNTLPLT 1 QQHNTLPLT

Show all Query IDs for a Family

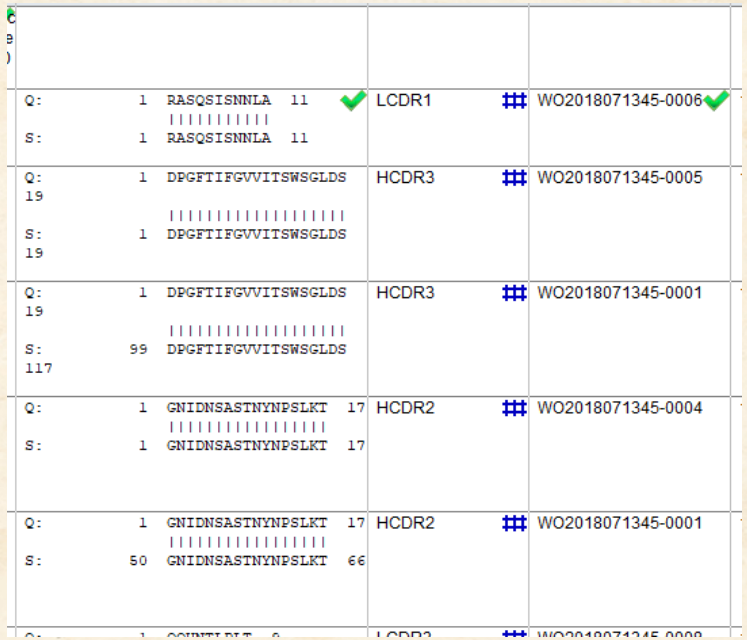
- Edit Column Rule for Query ID
- Choose Summarize Unique Values





Summarize Unique Values

- Cell Glyph Changes
- Export or Statistics to see value



Q: 1 RASQSISNNLA 11 S: 1 RASQSISNNLA 11	LCDR1	WO2018071345-0006
Q: 1 DPGFTIFGVVITSWSGLDS 19 S: 1 DPGFTIFGVVITSWSGLDS 19	HCDR3	WO2018071345-0005
Q: 1 DPGFTIFGVVITSWSGLDS 19 S: 99 DPGFTIFGVVITSWSGLDS 117	HCDR3	WO2018071345-0001
Q: 1 GNIDNSASTNYNPSLKT 17 S: 1 GNIDNSASTNYNPSLKT 17	HCDR2	WO2018071345-0004
Q: 1 GNIDNSASTNYNPSLKT 17 S: 50 GNIDNSASTNYNPSLKT 66	HCDR2	WO2018071345-0001

LCDR1
HCDR3
HCDR2
LCDR3
HCDR1
LCDR2
LC-Ebola
HC-Ebola

Create Subtable to Summarize Sequence Results

- But that solution only gives a list of Query IDs associated with the family – it doesn't tell you which sequence was returned with each query.

LCDR1	WO2018071345-0006	100.00
HCDR3	WO2018071345-0005	100.00
HCDR3	WO2018071345-0001	14.84
HCDR2	WO2018071345-0004	100.00
HCDR2	WO2018071345-0001	13.28
LCDR3	WO2018071345-0008	100.00
LCDR3	WO2018071345-0002	8.49

Create Subtable to Summarize Sequence Results

- The answer is to create a table showing data from different sequence hits.
- Complete steps are available in a recipe at bizint.com/piugbio :
- Create subtable from columns
- Change rule to Summarize All Values
- Export

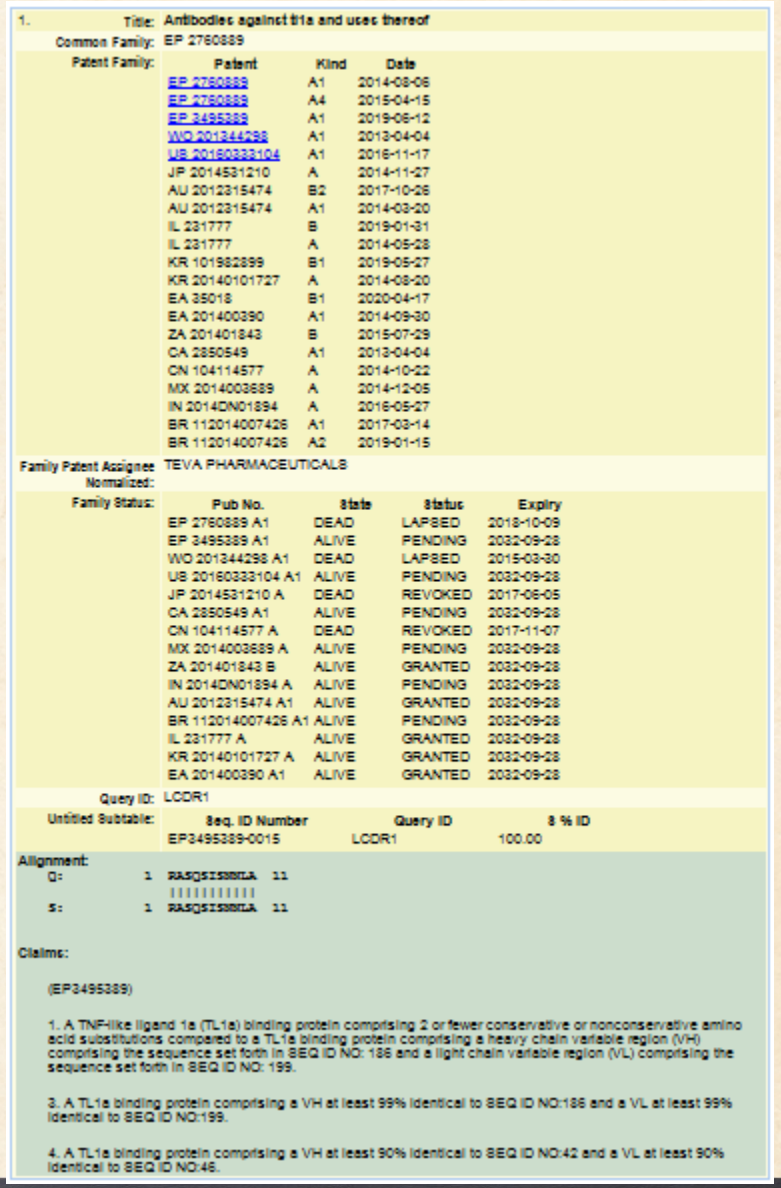
WO2018071345-0006	LCDR1	100.00	5.2
WO2018071345-0005	HCDR3	100.00	5.3
WO2018071345-0001	HCDR3	14.84	5.4
WO2018071345-0004	HCDR2	100.00	5.5
WO2018071345-0001	HCDR2	13.28	5.6
WO2018071345-0008	LCDR3	100.00	5.7
WO2018071345-0002	LCDR3	8.49	5.8
WO2018071345-0003	HCDR1	100.00	5.9
WO2018071345-0007	LCDR2	100.00	5.10
WO2018071345-0002	LC-Ebola	100.00	5.11
WO2018071345-0001	HC-Ebola	100.00	5.12

Key Tips of Summarized Subtable

- Rename columns before creating subtable
  you can’t change them after the fact
- It is best to include a column which helps identify the data in each row (Sequence ID in the example)
- Fixed Width property of the Alignment column doesn’t work in a subtable

Summary Records export

- A Word export containing content of the chart, full claims set, full alignment from selected records
- Yellow section contains columns of the chart
- Green section can contain one alignment, one full set of claims



1. Title: Antibodies against tl1a and uses thereof

Common Family: EP 2760889

Patent Family:

Patent	Kind	Date
EP 2760889	A1	2014-08-06
EP 2760889	A4	2015-04-15
EP 3495389	A1	2019-06-12
WO 201344298	A1	2013-04-04
US 20160333104	A1	2016-11-17
JP 2014531210	A	2014-11-27
AU 2012315474	B2	2017-10-26
AU 2012315474	A1	2014-03-20
IL 231777	B	2019-01-31
IL 231777	A	2014-05-28
KR 101982899	B1	2019-05-27
KR 20140101727	A	2014-08-20
EA 35018	B1	2020-04-17
EA 201400390	A1	2014-09-30
ZA 201401843	B	2015-07-29
CA 2850549	A1	2013-04-04
CN 104114577	A	2014-10-22
MX 2014003689	A	2014-12-05
IN 2014DN01894	A	2016-05-27
BR 112014007426	A1	2017-03-14
BR 112014007426	A2	2019-01-15

Family Patent Assignee Normalized: TEVA PHARMACEUTICALS

Family Status:

Pub No.	State	Status	Expiry
EP 2760889 A1	DEAD	LAPSED	2018-10-09
EP 3495389 A1	ALIVE	PENDING	2032-09-28
WO 201344298 A1	DEAD	LAPSED	2015-03-30
US 20160333104 A1	ALIVE	PENDING	2032-09-28
JP 2014531210 A	DEAD	REVOKED	2017-06-05
CA 2850549 A1	ALIVE	PENDING	2032-09-28
CN 104114577 A	DEAD	REVOKED	2017-11-07
MX 2014003689 A	ALIVE	PENDING	2032-09-28
ZA 201401843 B	ALIVE	GRANTED	2032-09-28
IN 2014DN01894 A	ALIVE	PENDING	2032-09-28
AU 2012315474 A1	ALIVE	GRANTED	2032-09-28
BR 112014007426 A1	ALIVE	PENDING	2032-09-28
IL 231777 A	ALIVE	GRANTED	2032-09-28
KR 20140101727 A	ALIVE	GRANTED	2032-09-28
EA 201400390 A1	ALIVE	GRANTED	2032-09-28

Query ID: LCDR1

Untitled Subtable:

Seq. ID Number	Query ID	% ID
EP3495389-0015	LCDR1	100.00

Alignment:

```
Q:      1  RASQSISSWLA  11
           ||||||||||
S:      1  RASQSISSWLA  11
```

Claims:

(EP3495389)

1. A TNF-like ligand 1a (TL1a) binding protein comprising 2 or fewer conservative or nonconservative amino acid substitutions compared to a TL1a binding protein comprising a heavy chain variable region (VH) comprising the sequence set forth in SEQ ID NO: 186 and a light chain variable region (VL) comprising the sequence set forth in SEQ ID NO: 199.

3. A TL1a binding protein comprising a VH at least 99% identical to SEQ ID NO:186 and a VL at least 99% identical to SEQ ID NO:199.

4. A TL1a binding protein comprising a VH at least 90% identical to SEQ ID NO:42 and a VL at least 90% identical to SEQ ID NO:46.

Resources

- bizint.com/tips for links to key documentation
- BizInt Smart Charts for Patents Mini Guide
- bizint.com/piugbio for the recipe handout

THE JOURNEY CONTINUES...

BizInt Smart Charts

for Patents

VERSION 5

Thank you!

www.bizint.com

BizInt Smart Charts

for Patents

THE JOURNEY CONTINUES...

MARPAT Design Workshop

Wednesday, June 3 8:30 PT