Science-Metrix

Genomics in Denmark

November 2002

Overview of Research in Genomics in Denmark

Prepared for
Genome Canada

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Executive Summary

This report presents an overview of genome research in Denmark using publicly available data such as information from the Internet and data extracted from the Medline database.

Part I presents an overview of genomic research programs in Denmark. Unlike Canada, Danish genomic research is not funded by a specific government program or non-governmental organization. In Denmark, genome research is financed by government agencies that provide funds for research at large. In spite of this, Danish genomics grew steadily during the last decade. Part I also presents data from the Internet on Danish institutions that are active in the field.

Drawing from the Medline database, Part II examines the distribution of papers in genomics by sector, institution, city, and researcher. The distribution of research in genomics in Denmark is concentrated in three locations:

- Copenhagen: its output of papers is unmatched, it hosts the leading university, four of the six leading hospitals, and half of the leading researchers.
- Aarhus: it ranks second in scientific output, it hosts the second most productive university, the second most productive hospital, and the second and third leading researchers.
- Odense: the city ranks third in terms of scientific output, it hosts the third most productive university, and the leading Danish researcher in genomics is located there. It is one of the most active Danish urban centres in terms of publicizing its research in genomics on the Internet.

One of the salient aspects of the field of genomics in Denmark is the high proportion of the scientific output by the private sector: with 15% of the scientific papers, the proportion of papers published by firms is about seven times larger than in neighbour countries such as Sweden and the Netherlands.

The views presented in this report are those of Science-Metrix and do not necessarily reflect the opinions of Genome Canada.

I. An Overview of Genomics in Denmark

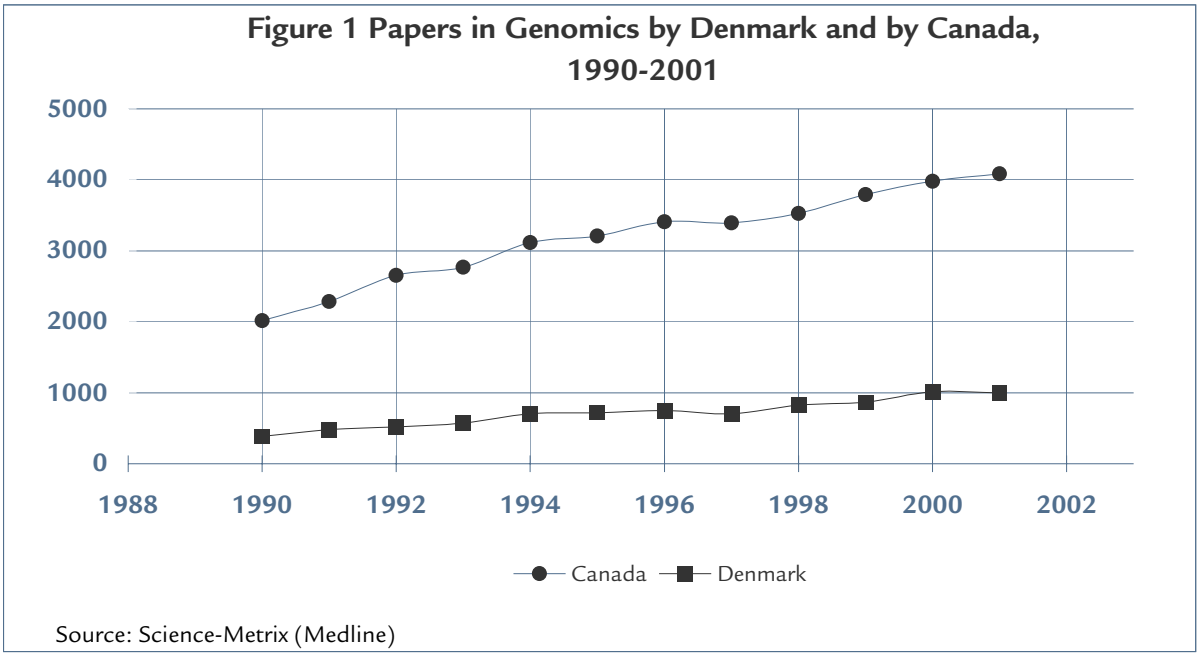
Denmark is a modern, prosperous nation that participates in the political and economic integration of Europe. It is a thoroughly modern market economy that features high-tech agriculture, up-to-date industry, extensive government welfare measures, comfortable living standards, a stable currency and high dependence on foreign trade. The country has opted out of the European Union's Maastricht Treaty and the European monetary system (EMU), although its currency, the Danish krone, is pegged to the Euro (1 krone = 1€ ≈ 1.50$CAN). Denmark's population and labour force are 17% that of Canada's. Denmark and Canada's GDP per capita are in the same range (Table 1, CIA. 2002. *The World Factbook 2002*).

Table 1. Basic Socio-Economic Statistics

	Denmark	Canada
Area (sq km)	43,094	9,976,140
Population (July 2002 est.)	5,368,854	31,902,268
Labour force (2001 est.)	2,856,000 (53% of pop.)	16,400,000 (51%)
GDP*	US $150 billion	US $875 billion
GDP per capita*	US $28,000	US $27,700
Government type	Constitutional monarchy	Parliamentary democracy

* Purchasing power parity – 2001 est.
Source: CIA. 2002. *The World Factbook 2002*.

Between 1990 and 2001, Denmark published 8,550 papers indexed by Medline (measured by first author of paper and Danish affiliation). This compares to 38,250 papers published by Canada during the same period. The output of genomics papers in Denmark grew more rapidly (9,4% year-on-year average) than in Canada during the 1990s (6,7%).



National Research Programs in Genomics

Extensive research on the Internet reveals that genome research in Denmark is not specifically funded by government programs or private foundation. The funding of genomic research is done through government agencies that finance research at large.

Forskningsstyrelsen

The *Forskningsstyrelsen* (Danish Research Agency) funds research in biotechnology and genetics through four of its six research councils:

- *Statens Naturvidenskabelige Forskningsråd* - SNF, the Danish Natural Science Research Council;
- *Statens Sundhedsvidenskabelige Forskningsråd* - SSVF, the Danish Medical Research Council;
- *Statens Jordbrugs- og Veterinærvidenskabelige Forskningsråd* - SJVF, the Danish Agricultural and Veterinary Research Council;
- *Statens Teknisk-Videnskabelige Forskningsråd* - STVF, the Danish Technical Research council.

Although not focused on funding genomic research, these research councils finance multiple genomic initiatives and act as structuring entities in genomics by channelling funds in specific areas according to government priorities. In 1998, the four research councils involved in biotech and genetics announced an investment of 1,423 million kroner to be spent on all their activities. Other programs such as *Biotek* (a biotechnology research program), *National satsning på bioteknologi* (national focus on biotechnology) and the *Bioteknologisk Instrumentcenter* (Biotechnology Instrument Centre) announced spending of 352 million kroner. All these programs and research

councils addressed the financing of biotechnology or genetics, but none specifically targeted at genomics.

Danmarks Grundforskningsfond

The *Danmarks Grundforskningsfond* (Danish Research Foundation) is an independent, though government-funded, organization whose primary aim is to identify and support groups of scientists who distinguish themselves in an international evaluation of the quality and originality of their research. It supports 37 research centres, five of which have a particular interest in genomics (as shown in Table 2). The research funds of the Danish Research Foundation correspond to 2% of the annual Danish public research budget.

Table 2. Research groups in genomics funded by the Danish Research Foundation

Research groups	Time frame	Institutions involved	Avg. annual grant M kroner
Center for Biologisk Sekvensanalyse (CBS, Centre for Biological Sequence Analysis)	1998-2003	The Technical University of Denmark	7
Center for Plante-Mikrobe Symbioser (Centre for Plant-Microbe Symbiosis)	1998-2002	Risø Research Centre	4.8
Center for Molekylær Plantefysiologi (PlaCe, Centre for Molecular Plant Physiology)	1998-2002	The Royal Veterinary and Agricultural University	8
Center for Eksperimentel Bioinformatik (CEBI, Centre for Experimental Bioinformatics)	1998-2002	The University of Southern Denmark, Odense	7
Danmarks Grundforskningsfonds Wilhelm Johannsen Center for Funktionel Genomforskning (Wilhelm Johansen Centre for Functional Genome Research)	2001-2006	University of Copenhagen	6

Genome Research in Danish Universities

Whereas Part II of the report measures scientific output using scientometric methods, this part presents a summary of the data made available by organizations through the Internet. Although the majority of Danish universities are involved in research in genomics, proteomics or bioinformatics, some universities have a greater presence on the Internet in genomics. These universities are listed in Annex I.

The main universities involved in the field are the *Københavns Universitet* (University of Copenhagen), more specifically its department of medical biochemistry and genetics, and the *Syddansk Universitet* (University of Southern Denmark), which has regrouped its biotechnology research facilities under an umbrella called Bio Team South (http://www.bioteam.org/).

The University of Copenhagen's Department of Medical Biochemistry and Genetics (http://www.imbg.ku.dk/IMBG-UK/default.htm) is home to several research groups with interests in genomics. The Centre for Biomolecular Recognition works mainly on peptide nucleic acid (PNA) while the Laboratory of Experimental Molecular Genetics works on developing transgenic mouse models for neurological diseases. The Resource Centre for Linkage Analysis has gathered data on the genetic markers, diseases and common traits of 850 Copenhagen families with more than four children. The RNA research group works on the biology of group I introns while the Neurogenetics Section works on disorders caused by CAG expansions. Finally, the Wilhelm Johannsen Centre for Functional Genome Research pursues research on the Mendelian Cytogenetics Network (MCN), specifically on the systematic identification of disease genes by structural chromosome rearrangements.

The University of Southern Denmark's Bio Team South encompasses three other organizations in addition to itself: the *Odense Universitetshospital* (Odense University Hospital), the Centre for Proteome Analysis in Life Sciences, which works on understanding the proteome of different organisms, and the *Forskerparken Fyn* (International Science Park) of Odense, which hosts many biotech companies and closely interacts with the universities and colleges. The Department of Biochemistry and Molecular Biology[1] hosts many research groups that are actively pursuing research in fields related to genomics[2].

Genome Research in the Health Sector

The most important player in genomic research in the health sector is a collective known as the University of Copenhagen Hospitals, the most important constituent being the *Rigshospitalet*. The *Rigshospitalet* hosts the Finsen laboratory, an important cancer research laboratory. Another important constituent is the Glostrup hospital with the Department of Clinical Biochemistry, which performs research into diabetes as well as nervous and metabolic disorders.

The Clinical Biochemistry and Clinical Genetics department at the *Odense Universitetshospital*, which is affiliated with the University of Southern Denmark, performs research in the areas of molecular medicine and method development and of validation and standardization in the fields of clinical biochemistry, genetics and pharmacology.

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[1] http://www.sdu.dk/Nat/bmb/index.shtml

[2] That is, in particular, the Biomedical Research and Molecular Cell Biology Group, the Eukaryotic Gene Expression and Differentiation Group, the Microbiology Group, the Protein Interaction Laboratory (PIL) and the Protein Research Group. The last two are members of the Center for Experimental Bioinformatics (CEBI).

Finally, the *Århus Kommunehospital*, which is part of the Aarhus University Hospitals network, is also a significant health sector player in genome research. It has active clinical genetics and clinical biochemistry departments. Hospitals that publicize their research in genomics on the Internet are listed in Annex I.

Genome Research in Governmental and Non-Governmental Organizations

Only one government research centre was found to be active on the Internet in the field of genomics. The Department of Plant Biology of the *Danmarks JordbrugsForskning* (DJF, Danish Institute of Agricultural Science) conducts research on basic, strategic and applied molecular genetics and biotechnology.

The *Kræftens Bekæmpelse* (Danish Cancer Society), a non-governmental organization, performs work in genomics within its cancer research program held in collaboration with universities.

Genome Research in the Private Sector

No pan-Danish organization appears to promote or finance genomic research in the private sector. Nonetheless, there are around 30 firms that publicize their research in genomics or their products on the Internet. Most of these are small start-ups and some of them are spin-offs of university research centres. There are however, a few multinational corporations with their headquarters or an important branch in Denmark (ex.: Maxygen, Novo-Nordisk A/S, Acadia Pharmaceuticals, etc.). Most of the companies perform pharmaceutical research, often targeted at central nervous system disorders (e.g. Lundbeck A/S, Azign A/S, Neurosearch A/S, etc.). Other areas covered by private firms are the engineering of new research materials for genomics, proteomics and bioinformatics or research for the food industry. The address of firms located in Denmark that perform research in genomics can be found in Annex II.

* * *

Unlike Canada and other leading countries in genomics, Denmark did not specifically invest in this field. This might explain why private firms are relatively more important in genomic research in Denmark than in other countries, i.e. this sector may not be as reliant on public funds as universities are. Despite the lack of a national program, genomie research in Denmark has grown significantly during the last decade: a significant number of research institutes has emerged and a dynamic biotech industry is now firmly in place.

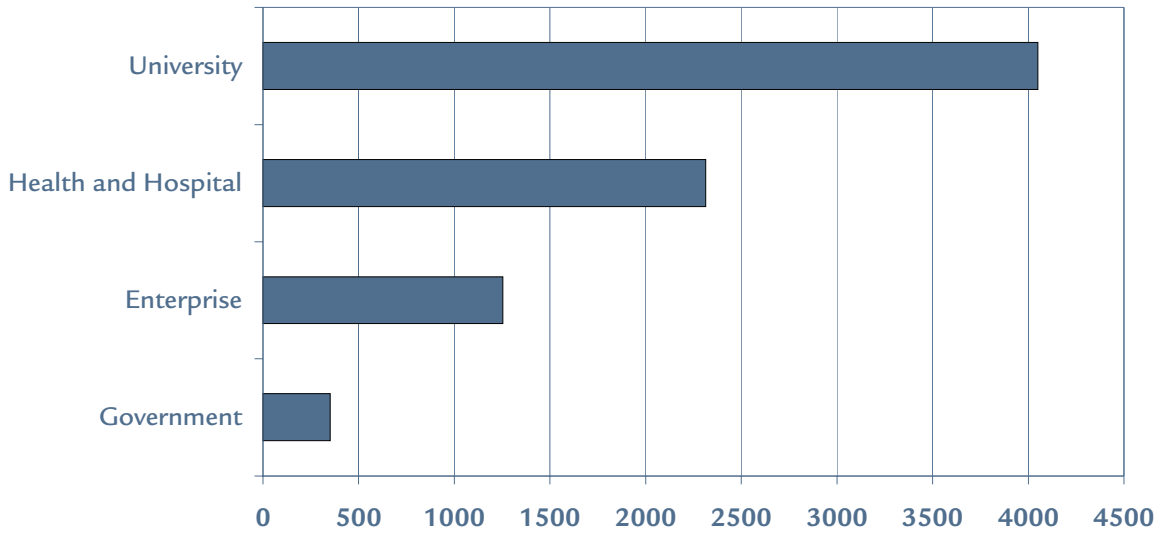
II. Leadership Structure of Genomics in Denmark

This part examines the distribution of papers in genomics by sector, institution, city and researcher. The Medline database is used since more than 91% of papers in genomics are published in journals classified in the fields of Biomedical Research and Clinical Medicine. From 1990 to 2001, Denmark published around 8,550 genomics papers that were indexed by Medline (measured by first author of paper and Danish affiliation).

Distribution of Papers by Sector

In Denmark, 47% of papers in genomics are authored by researchers affiliated with universities (Figure 2). The health sector also plays an important role since 27% of papers are authored by researchers affiliated with a health centre, a medical clinic or a hospital (including university hospitals). With 15% of the scientific output, private firms play a more central role than in neighbouring countries – e.g. private firms account for about 2% of the scientific output in the Netherlands and in Sweden. Governmental organizations authored 4% of papers, while institutions from other and unknown sectors authored about 7% of Danish papers.

Figure 2 Papers in Genomics by Sector in Denmark, 1990-2001



Source: Science-Metrix (Medline)

As Figure 3 clearly shows, the production of papers amongst university-level institutions in Denmark is fairly concentrated. In particular, with more than 1,450 papers, the University of Copenhagen is responsible for 36% of the output, whereas, with 1,455 papers, the University of Aarhus is responsible for 28%. The University of Southern Denmark located in Odense is third with less than 500 papers; the Royal Veterinary and Agricultural University (KVL), located in Frederiksberg, which is part of the greater Copenhagen area, published about 400 papers, while the Technical University of Denmark located in Lyngby published about 350 papers in genomics indexed by Medline. These five universities account for 92% of the Danish output in genomics.

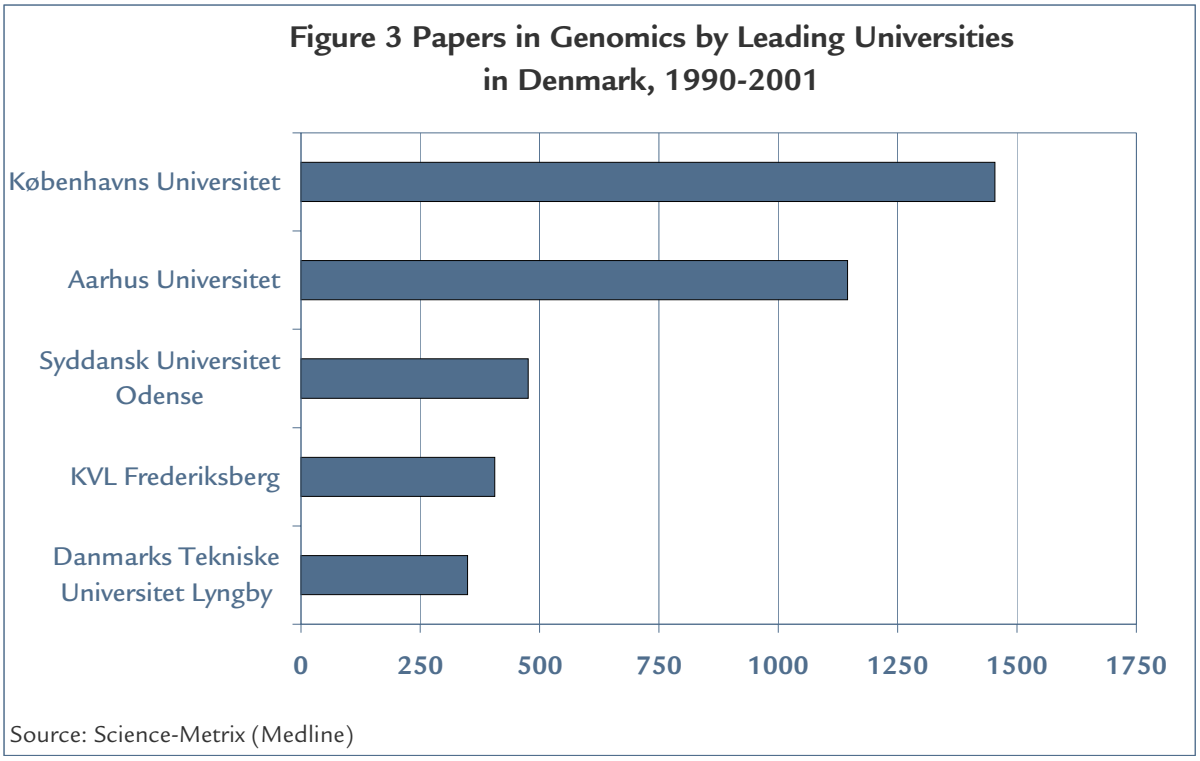
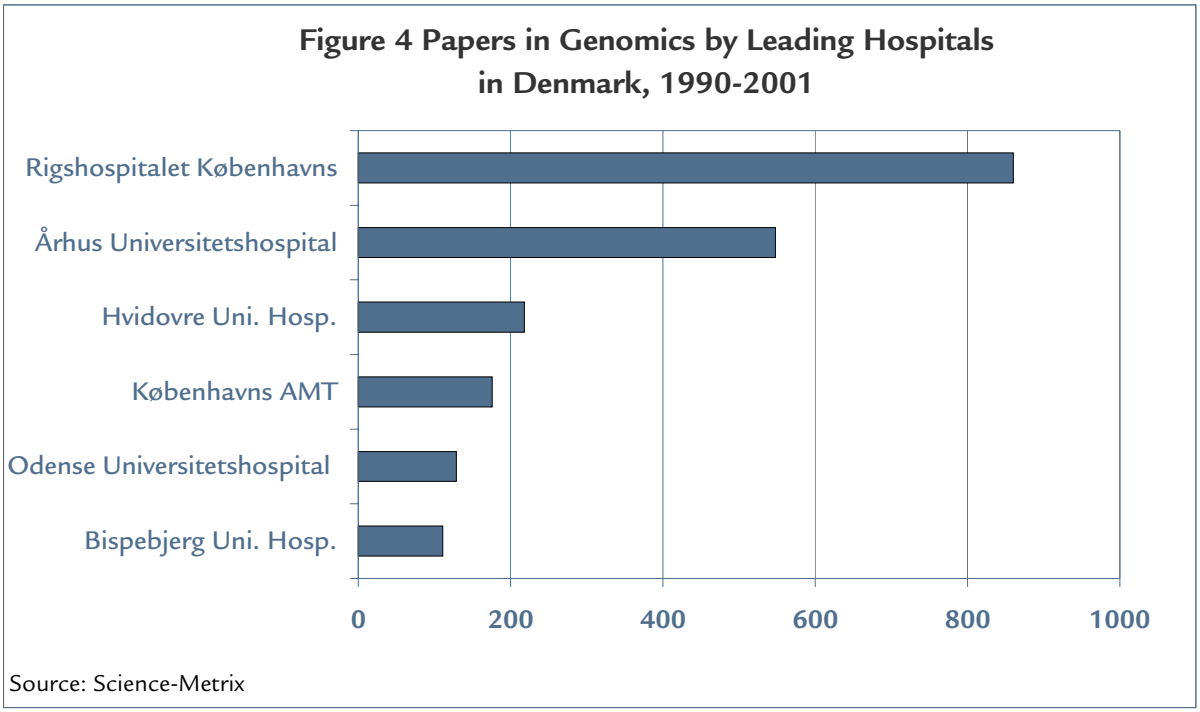


Figure 4 lists the most active institutions in the health and hospital sector. Not surprisingly, all of them are university hospitals, and two thirds are located in Copenhagen (*Rigshospitalet Københavns*; *Hvidovre Uni. Hosp*; *Københavns AMT*; *Bispebjerg Uni. Hosp.*). In fact, hospitals from Copenhagen account for two thirds of the Danish output in the health sector. Hospitals from Aarhus are also important, accounting for 25% of Danish scientific output in genomics. The two leading Danish hospitals in genome research are the Copenhagen University Hospital and the Aarhus University Hospital.



In contrast to other countries, publications by private firms in Denmark constitute a sizeable proportion of the papers (15%) published in the field of genomics. Data presented in Table 2 reveals that 44% of the output in this sector stems from Novo Nordisk A/S, which is located in Bagsvaerd and performs research on diabetes and drug development. Novo Nordisk's impressive performance is linked to its position as a world leader in diabetes treatments and hormonal therapy treatments[3].

Also worth mentioning is the scientific output by the Statens Serum Institute (21%), Chr. Hansen's Laboratory (3%) and Danisco (3%). Nine firms that published 66% of papers are located in Copenhagen, thus making it the industrial centre of genomics in Denmark.

[3] Established in 1923, the Nordisk company split into two companies, Novo and Nordisk in 1925. After 65 years, the two companies decided to merge their activities in 1989. In the 1990s, the company split into two specialized companies, Novo Nordisk, specializing in health, and Novozymes, specializing in enzyme production.

Table 2 Ranking of Leading Enterprises in Genomics in Denmark
Number of Papers by City, 1990-2001

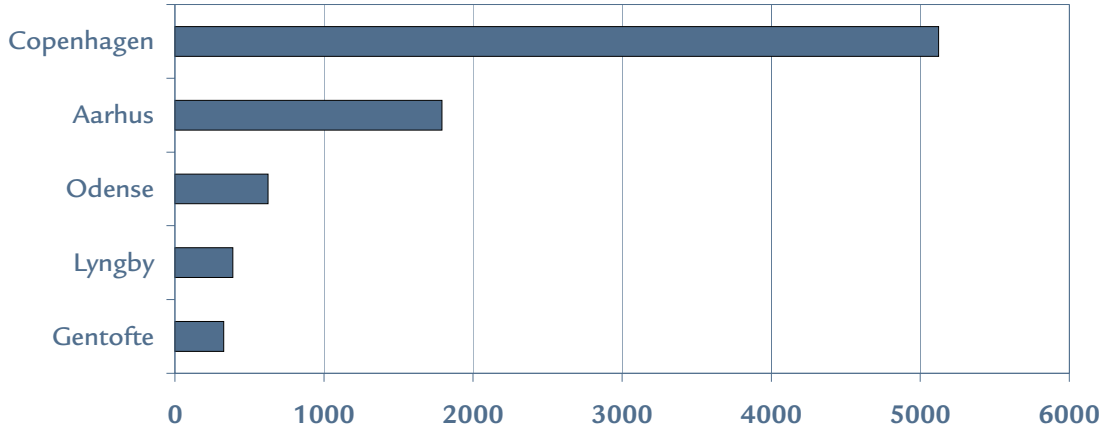
Rank	Enterprise	Headquarters' location	Copenhagen	Bagsvaerd	Gentofte	Horsholm	Maaloev	Ballerup	Glostrup	Odense	Others, unknown	Total
1	Novo Nordisk A/S	Denmark (Bagsvaerd)	217	172	117		36				15	557
2	Carlsberg Laboratory	Denmark (Coppenhagen)	277									277
3	Statens Serum Institute	Denmark (Coppenhagen)	269									269
4	Chr. Hansen's Lab	Denmark (Hørsholm)				34						34
5	Danisco	Denmark (Coppenhagen)	25									25
6	Leo Pharmaceuticals	Denmark (Ballerup)						16				16
7	Lundbeck	Denmark (Coppenhagen)	13									13
8	NeuroSearch	Denmark (Ballerup)						5	7			12
9	Nordic Bioscience Diag. A/S	Denmark (Herlev)	9									9
10	PNA Diagnostics	Denmark (Coppenhagen)	8									8
11	Dako	Denmark (Glostrup)							6			6
12	Pharmexa	Denmark (Hørsholm)				5						5
13	Unizyme Lab.	Denmark (Hørsholm)				4						4
	Others (n=13)		7			2				4	6	19
Total			825	172	117	45	36	21	13	4	21	1254

Source: Science-Metrix (Medline)

Position of Danish Cities in Genomic Science

Figure 5 shows that Copenhagen is the capital of genomics in Denmark with 58% of the country's output by city. The greater metropolitan area hosts several leading institutions active in the field of genomics, notably, the University of Copenhagen, multiple hospitals active in genomic research (*Rigshospitalet Københavns*; *Hvidovre Uni. Hosp*; *Københavns AMT*; *Bispebjerg Uni. Hosp.*), the Danish Cancer Society and a plethora of dynamic enterprises. The city of Aarhus ranks second with 21% of Denmark's scientific output, while Odense ranks third with 7.3%.

Figure 5 Papers in Genomics by Leading Cities in Denmark, 1990-2001

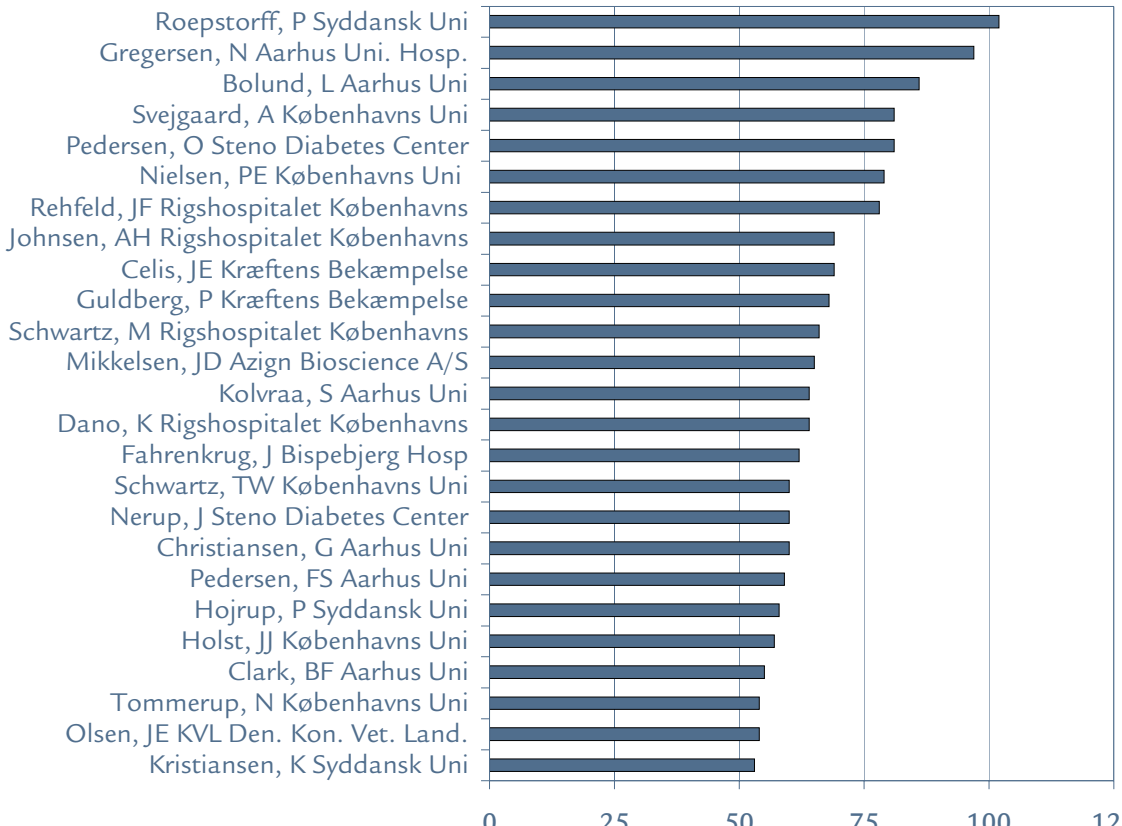


Source: Science-Metrix (Medline)

Leading Danish Researchers in Genomic Science

Figure 6 reveals that 19.5% of leading researchers are located at the *Københavns Universitet*. If we consider additional researchers from the Copenhagen University Hospitals, the Danish Cancer Society and the private sector, Copenhagen hosts 51.3% of Danish leading researchers. This comes as no surprise since Copenhagen ranks first in terms of output in genomics amongst Danish cities. The most productive researcher is located at *Syydansk Universitet* in Odense, whereas the second and third most productive researchers are located at *Aarhus Universitet*. Overall, the location of leading researchers is consistent with the ranking of leading universities and cities. Once again, the private sector provides a pattern different from that of other countries since three of the leading researchers work for Danish firms. One of them is from Azign Bioscience A/S (12th), and the two others come from the Steno Diabetes Centre, owned by Novo Nordisk A/S (respectively 5th and 17th). It is also worth noting that the Kræftens Bekæmpelse (Danish Cancer Society) is doing very well for an NGO since it hosts two of the 29 leading researchers (occupying 9th and 10th place).

Figure 6 Papers in Genomics by Leading Researchers in Denmark, 1990-2001



Source: Science-Metrix (Medline)

* * *

The distribution of research in genomics in Denmark is concentrated in the cities of Copenhagen, Aarhus and Odense. The top ranking universities provide a perfect mirror of these relative positions: *Københavns Universitet* is the Danish institution with the largest output (1,454 papers); *Aarhus Universitet* comes second (1,145 papers); and *Syddansk Universitet* in Odense ranks third (476 papers). Importantly, Part I showed that organizations in Odense are aggressively promoting research in genomics. Hence this city should not be overlooked, particularly since it is concentrating most of its genomic resources under one umbrella (Bio-Team South) that promotes collaboration between the private and public sector.

Annex I

Danish Universities Performing Research in Genomics

University	Department
Københavns Universitet (University of Copenhagen)	Wilhelm Johansen Center for Functional Genome Research http://www.wjc.ku.dk/ Department of Medical Biochemistry and Genetics http://www.imbg.ku.dk/IMBG-UK/default.htm Department of Clinical Biochemistry http://www.dcb-glostrup.dk/ Botanical Institute http://www.bot.ku.dk/
Syddansk Universitet (University of Southern Denmark, Odense)	Department of Biochemistry and Molecular Biology http://www.sdu.dk/Nat/bmb/index.shtml Centre for Proteome Analysis in Life Sciences http://www.proteome-analysis.dk/ Faculty of Health Science http://www.sdu.dk/health/RESEARCH/index.html
Danmarks Tekniske Universitet (Technical University of Denmark)	BioCentrum-DTU (biotechnology department) http://www.biocentrum.dtu.dk/index_eng.html
Aalborg Universitet (Aalborg University)	Department of Biotechnology http://www.bio.auc.dk/
Denmark Kongelige Veterinær- og Landbohøjskole (The Royal Veterinary and Agricultural University)	Department of Ecology http://www.ecol.kvl.dk/ Department of Animal Science and Animal Health http://www.husdyr.kvl.dk/
Aarhus Universitet (Aarhus University)	Institute of Biological Sciences http://www.biology.au.dk/ Faculty of Health Science http://www.health.au.dk/dept/dept_index_en.asp
Roskilde Universitetscenter (Roskilde University)	Department of Life Sciences and Chemistry http://www.ruc.dk/ruc_en/research/rpdepts/dept1/

Source: Science-Metrix (Internet)

Danish University Hospitals Performing Research in Genomics

Hospital	Department
Rigshospitalet Københavns	General website http://www.rigshospitalet.dk Finsen Laboratory – Cancer research http://www.finsenlab.dk
Århus Universitetshospital	Department of Clinical Genetics http://www.auh.dk/akh/afd/kga/uk/index.htm Department of Clinical Biochemistry http://www.auh.dk/akh/afd/klinbio/UK/index.htm Molecular Diagnostic Laboratory http://www.mdl.dk/research.html
Glostrup Hospital	Department of Clinical Biochemistry http://www.dcb-glostrup.dk/research.htm
Odense Universitetshospital	Clinical Biochemistry and Clinical Genetics Department http://www.sdu.dk/health/RESEARCH/UNITS/CLINBIOC.HTM

Source: Science-Metrix (Internet)

Annex II Companies Active in the Fields of Genomics, Proteomics and Bioinformatics in Denmark

This list comprises enterprises that were active in genomics between 1990 and 2002 or that acquired firms that were active in genomics during those years. Companies in brackets have either bought an interest in, took control or are partners of the firms listed.

Acadia Pharmaceuticals A/S
Fabriksparken 58
DK-2600 Glostrup
Denmark
Tel: +45 4329 3000
Fax: +45 4329 3030
Internet: www.acadia-pharm.com

ACE BioSciences A/S
Unsbjergvej 2
DK-5220 Odense SØ
Denmark
Tel: +45 6565 2121
Fax: +45 6565 2122
Email: mail@acebiosciences.com
Internet: www.acebiosciences.com

Azign Bioscience A/S
Vestre Teglgade 10
DK-2450 Copenhagen SV
Denmark
Tel: +45 70 22 22 02
Fax: + 45 70 23 23 04
Email: info@azign.com
Internet: www.azign.com

Carlsberg A/S
1, Valby Langgade
DK-2500 Valby
Denmark
Tel: + 45 33 27 27 27
Fax: + 45 33 27 48 50
Email: carlsberg@carlsberg.com
Internet: www.carlsberg.com

Chr. Hansen
Bøge Allé 10-12
DK-2970 Hørsholm
Denmark
Tel: +45 45747474
Fax: +45 45748888
Internet: www.chr-hansen.com

Combio A/S
Gamle Carlsberg Vej 10
DK-2500 Valby, Copenhagen
Denmark
Tel: +45 33 27 5404
Fax: +45 33 27 5371
Email: contact@combio.dk
Internet: www.combio.dk

DakoCytomation Denmark A/S
Produktionsvej 42
DK-2600 Glostrup
Denmark
Tel: +45 44 85 95 00
Fax: +45 44 85 95 95
Email: contact@dakocytomation.com
Internet: www.dakocytomation.com

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Langebrogade 1
P.O. Box 17
DK-1001 Copenhagen K
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Tel: +45 3266 2000
Fax: +45 3266 2175
Email: info@danisco.com

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DK – 2950 Vedbaek
Denmark
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Fax: +45 45 66 18 88
Email: exiqon@exiqon.com
Internet: www.exiqon.com

Genmab A/S
P.O. Box 9068
1253 Copenhagen K
Denmark
Tel: + 45 7020 2728
Fax: + 45 7020 2729
Internet: www.genmab.com

H. Lundbeck A/S
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Fax: +45 36 30 19 40
Email: information@lundbeck.com
Internet: www.lundbeck.com

Hobolth Instruments ApS
Roskildevej 48 I
3400 Hillerød
Denmark
Tel: 40 30 97 05
Fax: 48 24 37 32
Email: hia@hobolth.dk
Internet: www.hobolth.dk

Inoxell
Kogle Allé 5
DK-2970 Hoersholm
Denmark
Tel: +45 45 17 63 00
Fax: +45 45 17 63 01
Email: info@inoxell.com
Internet: www.inoxell.com

Leo Pharma A/S
Industriparken 55
DK-2750 Ballerup
Denmark
Tel: +45 4494 5888
Fax: +45 4494 3040
Email: leo.group@leo-pharma.com
Internet: www.leo-pharma.com

Maxygen - Denmark Office
Agern Allé 1
DK-2970 Hørsholm
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Tel: +45 7020 5550
Fax: +45 7020 5530
Email: maxygen@maxygen.dk
Internet: www.maxygen.com

Neurosearch A/S
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DK-2750 Ballerup
Denmark
Tel: +45 4460 8000
Fax: +45 4460 8080
Email: licensing@neurosearch.dk
Internet: www.neurosearch.com

Nordic Bioscience Diagnostics A/S
Herlev Hovedgade 207
DK-2730 Herlev
Denmark
Tel: + 45 44 54 7777
Fax: + 45 44 54 8888
Internet: www.nordicbioscience.com

Novo Nordisk A/S
Novo Allé
2880 Bagsværd
Denmark
Tel: +45 4444 8888
Fax: +45 4449 0555
Email: webmaster@novonordisk.com
Internet: www.novonordisk.com

Novozymes A/S
Krogshoejvej 36
2880 Bagsvaerd
Denmark
Tel: +45 88 24 99 99
Fax: +45 88 24 99 98
Internet: www.novozymes.com

Pharmexa A/S
6, Kogle Allé
DK-2970 Hørsholm
Denmark
Tel: +45 45 16 25 25
Fax: +45 45 16 25 00
Email: info@pharmexa.com
Internet: www.pharmexa.com

PNA Diagnostics A/S [likely a subsidiary of Roche A/S Diagnostics]
Rønnegade 2
DK-2100 Copenhagen Ø
Denmark
Tel: +45 3927 9977
Fax: +45 3927 9979

Pride Proteomics ApS
Forskerparken 10C
DK-5230 Odense M
Denmark
Tel: +45 63157890
Fax: +45 63157892
Email: info@prideproteomics.com
Internet: www.prideproteomics.com

Profundis Biotech ApS
Science Park Aarhus
10C Gustav Wieds Vej
DK-8000 Aarhus C
Denmark
Tel: +45 2446 3066
Email: pb@profundis-biotech.dk
Internet: www.profundis-biotech.dk

Protana Engineering A/S
Staermosegaardsvej 6
DK-5230 Odense M
Denmark
Tel: +45 6557 2300
Fax: +45 6557 2301
Email: info@protanaengineering.com
Internet: www.protanaengineering.com

SBI Advanced Technologies A/S
Agern Alle 3
Hørsholm DK-2970
Denmark
Tel: 45 4516 2800
Email: info@strubix.com
Internet: www.strubix.dk

Statens Serum Institut
Institut Artillerivej 5
2300 Copenhagen S
Denmark
Tel: +45 3268 3268
Fax: +45 3268 3868
Email: serum@ssi.dk
Internet : www.serum.dk

Unizyme Laboratories A/S
Dr. Neergaardsvej 17
DK-2970 Hørsholm
Denmark
Tel: +45 45 76 01 54
Fax: +45 45 76 14 07
Email: mail@unizyme.dk
Internet: www.unizyme.com