

# Molecular Biology

Panel 3

Evaluation  
Division for Science

Molecular Biology  
Panel 3

Botany, Zoology  
and Ecology-related  
Disciplines  
Panel 1

Public Health and  
Health-related  
Research  
Panel 5

Clinical Research  
Panel 4B

Clinical Research  
Panel 4A

Physiology-related  
Disciplines  
Panel 2

Psychology and  
Psychiatry  
Panel 6



## **Molecular Biology – Panel 3**

**Microbiology, immunology, cell biology, biochemistry, molecular biology,  
genetics, genomics, biotechnology including breeding and bioinformatics**

---

---

© The Research Council of Norway 2011

The Research Council of Norway  
P.O.Box 2700 St. Hanshaugen  
N-0131 OSLO

Telephone: +47 22 03 70 00  
Telefax: +47 22 03 70 01  
bibliotek@rcn.no  
www.rcn.no/english

The report can be ordered at:  
[www.forskningsradet.no/publikasjoner](http://www.forskningsradet.no/publikasjoner)  
or green number telefax: +47 800 83 001

Design: Agendum as  
Printing: 07 Gruppen AS  
Number of copies: 500

Oslo, November 2011

ISBN 978-82-12-02991-0 (print)  
ISBN 978-82-12-02992-7 (pdf)

*Follow-up on previous evaluation*

Overall DDI presents as an excellent research environment for integrated basic and clinical research, with several very strong research groups and centers, technology platforms and publication record. The units were not represented in the same organizational context in the previous evaluation, and it is therefore difficult to follow this up at the division level. It is however clear that the hospital and medical faculty have gone through a major reorganization where one of the goals clearly is in line with the recommendations in the previous evaluation: to focus research via consolidation of research groups and implementation of a stronger scientific leadership structure. The unit has impressed in the self-assessment as well as in the discussions with the evaluation panel. There is a strong ambition here, and a solid base formed by the centers of excellence, by many strong research groups, well established internal as well as external collaborations, and a well motivated and clear joint leadership anchored in the University as well as in the Hospital. There are also several challenges, e.g. that each department is localized in three or four different sites, and that many small research groups or physician scientists work with only loose association to environments that form a critical mass. Other areas for improvement, which the leadership seem well aware of and are already dealing with, relate to low transparency concerning how internal resources are distributed to research activities and how these funds may be used to recruit young scientists or new group leaders in a career development program. Most recruitment is now at the postdoc level, without any clear follow up for tenure track positions. There is a newly built facility to store biobank samples, but it appears important now to develop the management on how samples are stored and used. The general funding is strong, although the ambition of such a strong research environment should be to increase external funding to more than 50%. This might be possible through a higher proportion of international (including EU) grants – even if this proportion is today high compared to most other institutions in Norway, it is low compared to many international institutions.

**Department of Medical Genetics, Division of Diagnostics and Intervention***Description*

The department is organized in four sections, and most full time researchers belong to one of them, “Research and Development”. The research is divided into two main subjects: 1) Molecular genetics (including Genetics of rare disorders, Genetics of common disorders, Epigenetics of immune mediated disorders and Molecular Cancer Research 2) Clinical genetics and epidemiology (including Cancer genetics and epidemiology and Clinical Genetics). The full time researchers work mainly in Molecular genetics, while the research in Clinical genetics and epidemiology is performed by physicians and genetic counsellors who also engage in clinical duties. The department runs two core facilities, in High throughput DNA sequencing (national core facility) and in Linkage analysis. Because the department covers the medical genetics in a population of 2.8 million Norwegians it has access to the largest collection of patients with genetic disorders in Norway. In 2010, there were 11 scientists of whom close to half were consultant physicians, 9 postdoctoral fellows and 10 PhD students. There are 3-6 dissertations every year. There are widespread national and international collaborations. There has been a major reorganization since 2004, due to a difficult situation in the preceding years following conflicts and a legal dispute at one of the hospitals departments. There was only limited activity and funding during 2002-2003.

*General comments*

The department leadership presents a clear SWOT analysis, where the increased importance of genetics, the department's position between research and clinical diagnostics, its collaborative networks, its state of the art technologies and access to unique patient material form a base for future development. The leadership also appears to have several strategies in place to develop the department and handle some of the weaknesses. This includes the formation of larger research groups through follow up and dialogue with scientists representing too low critical mass. It also includes a program to recruit and stimulate at the senior postdoctoral level to support new future group leaders. Five such positions have been launched during the last year.

Overall the difficult situation 2002-2003 has been dealt with in a remarkable way, and the strategic decision 2006 to position the department within high throughput DNA sequencing as a key technology has contributed considerably to this. There has been a very positive development in scientific activity, reflected in the numbers of publications, dissertations as well as the level of external funding. There is however still variable group sizes and uneven distribution of publications among the researchers. It is also important to focus more on research fields initiated and led by researchers at the department, even if it is reasonable, in a department dealing with clinical genetics, to have also projects where the department collaborates as a provider of specialized technology.

The department needs to implement a strategy for bioinformatics, which appears to be a bottleneck in many situations. This is an area where training and strategic recruitments are needed. Furthermore, there is no consensus regarding the optimal organization – should bioinformaticians form their own critical mass and milieu, or should they be integrated in strong biology groups?

*Scientific quality*

The unit reports 308 publications in 2005-2010. There are many strong papers in the best specialized journals, and several articles in the top general journals.

Grade: **Very Good to Excellent.**

*Societal impact*

The orientation of the research towards human genetics impacts on society in many different ways. Improved knowledge on rare genetic diseases can result in improved diagnosis, care and genetic counselling. Research on the genetics of common disorders can provide new insights into pathogenesis and pave the development for novel prevention or treatment strategies.

*Recommendations*

The leadership is recommended to continue its strategy to consolidate the research groups, to focus the research into strong areas, to recruit talented, new group leaders, to exploit the opportunities related to competence in DNA sequencing and access to a large biobanks, and to develop a strategy for the integration of bioinformatics competence. The solution for the latter problem may be approached also in a national perspective, as discussed elsewhere in this report.