MBI-Nytt
Nr 2 2014 – 1. april

Rein's Corner

Dear MBIers,

Time is flying. In particular at this time of the year, when spring sprouts and Easter is just around the corner. This is also high time for our professors and group leaders to prepare for new grant applications from the Research Council and the Cancer Society with May 21st and June 2nd as deadlines, respectively. It's a fierce competition. But I'm sure that we all appreciate that research funding has to be based on high quality and bright ideas. This is also the key message from the two sweedish professors Mats Benner and Gunnar Öquist in their recent report on the Norwegian research system: "Room for increased ambitions?". Although there is a lot of excellent research in Norway, they do point out that we could do much better on what they term "breakthrough research". They criticise our politicians for lacking focus on research quality and renewal. They criticise the Research Council for being too creative in pleasing the ministries with too many sector-oriented research programs. But they also criticise us - the universitites - for not being sufficiently bold and quality-focussed. *"The more successful research systems have maintained a 'protected space' for faculty to pursue independent research lines under the aegis of resourceful environments"* they point out. Not entirely new, we must admit. Yet, still spot on. So, let us pick up the glove, face the challenge and muster the best we have. When we apply for new funds for basic research, let us be inspired by Lewis and Clark when they set out from St. Louis in 1804 to explore the western frontiers of their continent. But let us not ignore the many fascinating opportunites offerd in applied research on the frontiers of biotechnology. When preparing your new proposals, make sure to take time to ask for experienced advice on the way and look for opportunities to form new and strong alliances in our endevours. I wish you all the best in your strive for securing funds for new and exciting research at MBI.

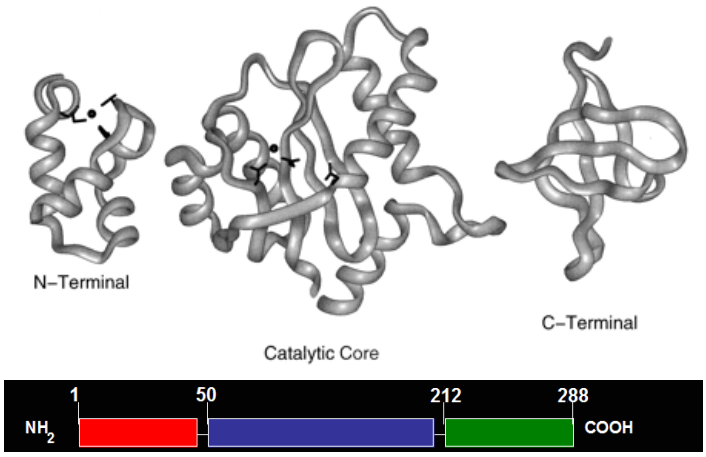
Rein

Molecule of the Month -HIV-1 integrase

By Dag E. Helland

For a retrovirus like HIV to replicate, its genome has to be integrated into the host genome. The virus-encoded enzyme integrase is catalyzing the integration of the proviral double stranded DNA.

HIV-1 integrase (IN) consists of a 288 aa (31kD) polypeptide (uniprot:P04585) and can be divided into three subdomains. Due to solubility problems only parts the structure have been properly solved (see e.g. pdb:1EX4; pdb:1K6Y). The N-terminal part has a Zn-finger and is conserved in retroviruses and retrotransposons. We found many years ago (pmid: 8554601) that IN has one Zn2+ ion per monomer. This part of IN might be involved in protein-protein interactions, reverse transcription, and targeting DNA interactions. In the catalytic core one cation (Mg2+ or Mn2+) is bound and required for catalysis. The core is highly conserved in retroviruses, retrotransposons, and in bacterial transposases. It recognizes conserved CA dinucleotides near the viral DNA termini and it is thought to determine sites of integration on the host genome The C-terminal region seems to bind DNA in a non-specific or semi-specific manner. It is not conserved between different retroviruses. This region contains a SH3 domain (aa 220 - 270). It has activity as a nuclear localisation signal and is the site of p300HAT binding and acetylation.



Three Distinct Subdomains of HIV-1 Integrase

Several IN inhibitors have been identified and we have been invited to participate in a new international project to identify IN inhibitors.

Research news

The ETECVAC-group receives 24 mill NOK for research on child diahrrea vaccine

The ETEVAC group at Uni Miljø - with a strong foothold at MBI, recently received 24 mill NOK from the Norwegian Research Council to continue their research on child diahrrea for a 4-year period, aiming to solve some of the major issues standing in the way for developing a vaccine for child diarrhea caused by E. coli, a major problem in developing countries.

Tildelinger fra Meltzer-fondet

Renate Hvidsten Skoge, **Magali Van Linden** og **Svein Støve** er tildelt 35.000 kr hver i prosjektstøtte fra Meltzer-fondet.

Tidsskriftet Naturen – publiseringskanal for master- og ph.d.-studenter

Universitetsforlaget oppfordrer master- og ph.d.-studenter til å bidra med populærvitenskapelige artikler i tidsskriftet Naturen. Naturen er Norges eldste populærvitenskapelige tidsskrift og har som mål å være et bindeledd mellom forskere og publikum ved å publisere pålitelig og leservennlig informasjon av høy kvalitet om det som går for seg i nasjonal og internasjonal forskning.

Bidrag i Naturen kan gi inntil 2 studiepoeng (avhengig av omfang) i opplæringsdelen for ph.d.-graden. Les mer om publisering i Naturen her: http://www.idunn.no/ts/natur

Calendar

PhD-defense Thomas Kalvik

Thursday 10. April, Thomas Vikestad Kalvik will defend his PhD-thesis entitled:

Substrates and cellular functions of the human N-terminal acetyltransferases NatA and NatC

The defense starts 10.15, at Auditoriet, VilVite

Trial lecture, Puja Gupta

Thursday 10. April, Puja Gupta will give the trial lecture for her PhD entitled:

The Zebrafish Phenome: Potential applications to uncover human disease mechanisms

The trial lecture starts 14.15, at N-terminalen

PhD-defense Puja Gupta

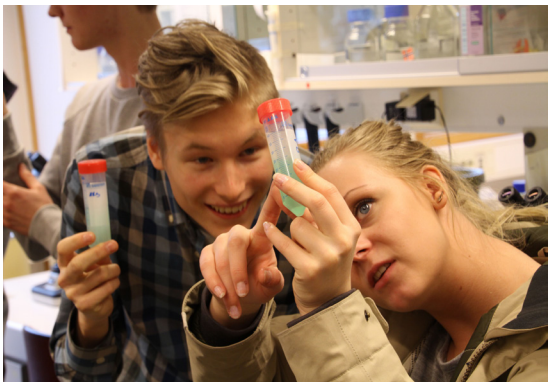
Friday 11. April, Puja Gupta will defend her PhD-thesis entitled: *Genetic and Molecular Analysis of Zebrafish Retina Development*
The defense starts at 10.15, at Stort auditorium

Student issues and teaching

Molecular Biology Day 2014

85 pupils and 5 teachers from upper secondary schools visited our department on Friday 14 March. Thank you to everyone who contributed – as guides, as lecturers, as demonstrator, as kitchen aid, as a helping hand – everyone who was here. The feedback so far has been nothing but excellent!

Kristin Gravdal introducing pupils to the secrets of the salmon louse. Foto: Wenche Telle



Pupils looking for their DNA. Foto: Wenche Telle

Application deadline for master studies: 15 April

You apply through Søknadsweb. For more information: http://www.uib.no/en/matnat.

Molecular Biology Career Day

This year the annual Molecular Biology Career Day went big. This year, the Career Day took place at VilVite, and we had an amazing turnout !

First out was NIFES, represented by Ole Jakob Nøstbakken, followed by Marit Valseth from Innovation Norway. Third in the group was Randi Hovland from the Centre for Medical Genetics and Molecular Medicine to talk about her normal day at Haukeland.

In the next session, Petter Frost from MSD animal health talked about his job and his normal day, followed by the Norwegian Environment Agency presented by Norith Eckbo. Last in this group was Katharina Tufteland to talk about Statoil, and what she, with a PhD from MBI, does for them.

In the lunch break, Karrieresenteret had a stand for people to ask questions about writing CVs, applications and attending job interviews!

After the awesome lunch, it was time for Renate Skoge, PhD student at MBI, to talk to us about her time, experience and path to and through MBI. Klinikk Hausken followed with Snorre Eikeland who delivered an enthusiastic and good presentation just as he did last year!

Frank Mikkelsen from BioSense talked about BioSense and the different industries one can choose with a scientific degree.

The last presentations of the day, was held by Marianne Holmedal who works for Aker Solutions, with a masters from MBI, and the Institute of Marine Research represented by Anna Wargelius and Sussie Dalvin.

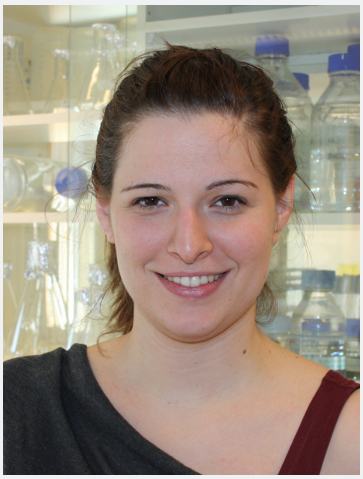
Heliks would like to thank everyone for coming, both student and presenters – and we hope this day was inspiring and useful to you all! Thank all of you who answered our survey – we got really good feedback that we hope will contribute to making the day even better next time!

Helene Torkildsen, Karina Dale og Ina B. Johansen express their thanks to everyone involved on behalf of Heliks

Mingling during the breaks was an important part of the day

New faces

Amanda Edson has been employed in a 4-year PhD-fellowship (universitetsstipendiat) in Kari Fladmark's group starting April 7th.



Julia Stiefel is a guest student at METASIG in Mathias Ziegler's group, until June 6th.

The MCB Young Scientist's Retreat 2014

March 6th around 30 PhD-candidates, most of them affiliated with the MCB research school, met up to present their project, exhange experiences and make connections across the organisational borders. Included in the program was also a brainstorming session, where the students discussed their needs and what they miss in terms of information and local formal training (courses and workshops). We expect some very useful input on how MCB can be improved!

New rules on chemical storage

One of our largest threats is terrorism. Chemicals play a central role, and the European Comission (EU) has conducted a large scale survey of the use of chemicals in Europe and countries connected to Europe. The survey uncovered the increased risk of terrorism where large amounts of chemicals are stored. The EU has thus issued a decree stating that the co-localization and storage of chemicals of many different natures, such as the MBI chemical room, is prohibited. The management at MBI is currently cooperating with the University of Bergen (EIA) and Rieber Eiendom to find an alternative solution. The solution may lead to a new round of rebuilding as well as the development of new safety routines. The Department will do our utmost to keep negative consequences to a minimum.

Last minute note

"Every ´no´ means you're one step closer to 'yes".

Joel Osteen, quoted in the book "Talk like TED" by Carmine Gallo