

Billedliste

Ved illustrationer hvori der indgår royaltyfri delelementer fra eksterne bidragsydere, i original eller redigeret form, efterfølges illustrators navn af forkortelsen mbf. (med bidrag fra) og kreditering af de respektive bidragsydere. Bidrag fra Shutterstock.com er royaltyfri, medmindre andet er anført.

Illustrator: Elin Steffensen, Griffle.
For øvrige informationer, se herunder.

I bogen vises skærbilleder fra de programmer eller websider der præsenteres i bogen:

BepiPred: <https://services.healthtech.dtu.dk/services/BepiPred-2.0/>

Brackets: <https://brackets.io/>

ChimeraX: <https://www.rbvi.ucsf.edu/chimeraX/>

Geneious Prime: <https://www.geneious.com/>

Protein Data Bank: <https://www.rcsb.org/>

Snappgene Viewer: <https://www.snappgene.com/snappgene-viewer>

TimeTree: <https://timetree.org>

UniProt: <https://www.uniprot.org/>

Kreditering af skærbilleder angives med programmets eller websidens navn.

KAPITEL 1

- Side 10 Figur 1: Skærbillede fra Brackets.
- Side 13 Figur 3: Lotte Thorup.
- Side 14 Figur 4: Jesper Ruggaard Mebus.
- Side 15 Figur 5-6: Fremstillet med Biomatters Geneious Prime.
- Side 16 Figur 7: Fremstillet med Biomatters Geneious Prime.
- Side 17 Figur 8: PDB ID: 2MYS. Skærbillede fra Biomatters Geneious Prime.

KAPITEL 2

- Side 19 Figur 9: Elin Steffensen mbf. Shutterstock.com: Mix and Match Studio (menneske), Dima Moroz (neandertaler), Eric Isselee (chimpanse og bonobo), photomaster (gorilla).
- Side 20 Figur 10: Skærbillede fra Biomatters Geneious Prime.
- Side 21 Figur 11: Lotte Thorup.
- Side 23 Figur 14: Lotte Thorup.
- Side 23 Figur 15: Skærbillede fra Biomatters Geneious Prime.
- Side 25-29 Figur 17-23: Skærbilleder fra Biomatters Geneious Prime.
- Side 31 Figur 24: Skærbillede fra Biomatters Geneious Prime.
- Side 32-34 Figur 26-28: Skærbilleder fra Biomatters Geneious Prime.

- Side 35 Figur 29: Alexrk, CC BY-SA 3.0, via Wikimedia Commons.
- Side 36 Figur 30: Shutterstock.com/Eric Isselee (kiwi).
- Side 37 Figur 32: Fremstillet med Biomatters Geneious Prime.
- Side 38 Figur 33: Skærbillede fra Excel, Office 365.
- Side 40 Figur 36: Skærbillede fra Excel, Office 365.
- Side 39 Figur 34: Shutterstock.com/Lakeview Images.
- Side 41 Figur 37-38: Skærbilleder fra TimeTree.
- Side 42 Figur 39: Skærbilleder fra TimeTree.
- Side 43 Figur 40: Skærbilleder fra TimeTree.
- Side 46-47 Figur 45-46: Skærbilleder fra Biomatters Geneious Prime.
- Side 47 Figur 47: Fremstillet med Biomatters Geneious Prime.

KAPITEL 3

- Side 49 Figur 48: Shutterstock.com: LuckyStep (haj), Andriy Nekrasov (delfin).
- Side 50 Figur 49: Hanne Wolff.
- Side 50 Figur 50: Lotte Thorup mbf. Shutterstock.com: Designua, BlueRingMedia, PDB ID: 1GZX, 1Z2H.
- Side 51-52 Figur 51-53: Molekylær grafik og analyse er udført med UCSF ChimeraX, udviklet af Resource for Biocomputing, Visualization, and Informatics ved University of California, San Francisco, med støtte fra National Institutes of Health R01-GM129325 og Office of Cyber Infrastructure and Computational Biology, National Institute of Allergy and Infectious Diseases.
- Side 52 Figur 54: Skærbillede fra ChimeraX (UCSF).
- Side 53 Figur 55-56: Skærbilleder fra Biomatters Geneious Prime.
- Side 54 Figur 57: Shutterstock.com: Kazakov Maksim (lucerne), Ngukiaw (rodknolde).
- Side 56 Figur 58, a-b: Hanne Wolff, c: Shutterstock.com/ Valery Evlakhov.

KAPITEL 4

- Side 57 Figur 59: Lotte Thorup.
- Side 58-61 Figur 60-68: Skærbilleder fra Biomatters Geneious Prime.
- Side 63 Figur 69: Skærbillede fra UniProt.
- Side 64 Figur 70-71: Molecular graphics and analyses performed with UCSF ChimeraX, developed by the Resource for Biocomputing, Visualization, and Informatics at the University of California, San Francisco, with support from National Institutes of Health R01-GM129325 and the Office of Cyber Infrastructure and Computational Biology, National Institute of Allergy and Infectious Diseases.

Side 65 Figur 72-73: Skærbilleder fra Biomatters Geneious Prime.

KAPITEL 5

Side 67 Figur 75, a: Hanne Wolff, b: Viktor Hundtofte Mebus.

Side 68 Hanne Wolff (reaktionsskema).

Side 69-73 Figur 76-80: Skærbilleder fra Biomatters Geneious Prime.

Side 73-74 Figur 81-83: Skærbilleder fra SnapGene Viewer (Dot-matics).

Side 75-77 Figur 84-87: Skærbilleder fra Biomatters Geneious Prime.

KAPITEL 6

Side 79 Figur 88: Shutterstock.com/AMARJEETSINH JHALA.

Side 79 Figur 89: Elin Steffensen mbf. Shutterstock.com/photomaster.

Side 80-81 Figur 90-92: Skærbilleder fra Biomatters Geneious Prime.

Side 81 Figur 93: Hanne Wolff.

Side 82-83 Figur 94-96: Skærbilleder fra Biomatters Geneious Prime.

Side 83 Figur 97: Fremstillet med Biomatters Geneious Prime.

Side 84-85 Figur 98-100: Skærbilleder fra Biomatters Geneious Prime.

Side 86 Figur 101: Shutterstock.com: Rainer Lesniewski (Syd-amerika), Luciana Tancredo (magellangås), Rob Jansen (andesgås).

Side 86 Figur 102: Skærbillede fra Biomatters Geneious Prime.

KAPITEL 7

Side 87 Figur 103: Shutterstock.com: Vector-3D (SARS-CoV-2), Ismagilova (solstråler).

Side 89 Figur 104: Skærbillede fra Biomatters Geneious Prime.

Side 90-93 Figur 106-111: Skærbilleder fra Biomatters Geneious Prime.

Side 93 Figur 112: Elin Steffensen mbf. Shutterstock.com/OSweetNature

Side 95-97 Figur 113-119: Skærbilleder fra Biomatters Geneious Prime.

Side 99 Figur 122: Skærbillede fra Biomatters Geneious Prime.

Side 100 Figur 123: Elin Steffensen mbf. Shutterstock.com/OSweetNature

Side 101-103 Figur 124-128: Skærbilleder fra Biomatters Geneious Prime.

KAPITEL 8

Side 105 Figur 130: Fremstillet med Biomatters Geneious Prime.

Side 105 Figur 131: Hanne Wolff.

Side 108 Figur 132: Lotte Thorup.

Side 109-115 Figur 133-136: Skærbilleder fra Biomatters Geneious Prime.

Side 115-116 Figur 137-139: Skærbilleder fra BepiPred.

KAPITEL 9

Side 117 Figur 140: Shutterstock.com/nnattalli.

Side 117 Figur 141: Shutterstock.com/Lucky-photographer.

Side 118 Figur 142: Lotte Thorup.

Side 119 Figur 146: Elin Steffensen mbf. Shutterstock.com: Anwarul Kabir Photo (sort sennep), Ramjee Verma (indisk sennep), LarisaL (vild havekål), sevenke (sareptasennep), Peter Zijlstra (agerkål), Le Do (raps).

Side 120-122 Figur 148-151: Fremstillet med Biomatters Geneious Prime.

Side 122 Figur 153: Shutterstock.com/nnattalli.

Side 123-126 Figur 154-157: Skærbillede fra Biomatters Geneious Prime.

KAPITEL 10

Side 129 Figur 159: Skærbilleder fra Biomatters Geneious Prime.

Side 131 Figur 160: Fremstillet med Biomatters Geneious Prime med Mauve Genome Alignment Plugin fra Mauve Pluginforfattere: Aaron Darling and Biomatters Ltd.

Kilder og videre læsning

KAPITEL 1 BIOINFORMATIK TEORI

- Claverie, J-M & C. Notredame: Bioinformatics for Dummies. 2007. Wiley Publishing Inc.
- Lesk A. M. Introduction to Bioinformatics. 2008. Oxford University Press.

KAPITEL 2. SMÅ STAMTRÆER - STORE FORKLARINGER

- Mammut – elefanter: Idé fra nedlagt hjemmeside DNA to Darwin.
- Rogaev, E. I. et al.: Complete Mitochondrial Genome and Phylogeny of Pleistocene Mammoth. *Mammuthus primigenius*. 2007, PLOS Biology. doi.org/10.1371/journal.pbio.0040073
- HIV: Bl.a. idé fra nedlagt hjemmeside DNA to Darwin.
- Gurtler, L. G. et al.: A new subtype of human immunodeficiency virus type 1 (MVP-5180) from Cameroon. 1994. *J. Virol.* 68 (3), 1581-1585.
- Virus evolution: Nakajima, S. et al.: Comparison of the evolution of recent and late phase of old influenza A (H1N1) viruses. 2000. *Microbiol. Immunol.* 44 (10), 841-847.
- Jenabian, M. A. et al.: Pitfalls of antiretroviral drug resistance genotyping of HIV-1 Group M and Group N from Cameroon by sequenced-based assays. 2015. *Niger Med. J.* 56 (6), 420-424.
- Shankarappa, R. et al.: Consistent viral evolutionary changes associated with the progression of human immunodeficiency virus type 1 infection. 1999. *J. Virol.* 73 (12), 10489-10502.
- Strudsefugle: Gemmell, N. J. et al.: Moa were many. 2004. *Proc. Biol. Sci.* 271(Suppl 6): S430-S432 doi: 10.1098/rsbl.2004.0234
- Stamtræer i felten: Soltis, D. et al.: Molecular Systematics of Plants II, Kapitel 1: DNA Sequencing (pp.1-42) af Soltis, Douglas & Pamala Soltis (1998). Chapman and Hall.

KAPITEL 3. FORM OG FUNKTION HÆNGER SAMMEN

- <https://cdn.rcsb.org/pdb101/teach/files/Visualizing-Hb-Mb-using-Chimera.doc>

KAPITEL 4. BIOINFORMATISK ANALYSE AF INSULIN

- PDB-101: Molecule of the Month: Insulin.
- Egebo, L. A. et al.: Bioteknologi A. Bind 3. 2019. Nucleus.

KAPITEL 5. PLASMIDUNDERSØGELSE

- Crameri, A. et al.: Improved green fluorescent protein by molecular evolution using DNA shuffling. 1996. *Nat. Biotechnol.* 14 (3), 315-319.
- BIO-RAD: pGLO Plasmid Map and Resources. <https://www.bio-rad.com/en-dk/applications-technologies/pglo-plasmid-map-resources?ID=NISQOC15>

KAPITEL 6. GÆS OG HÆMOGLOBIN

- McCracken, K. G. et al.: Phylogenetic and structural analysis of the HbA ($\alpha A/\beta A$) and HbD ($\alpha D/\beta A$) hemoglobin genes in two high-altitude waterfowl from the Himalayas and the Andes: Bar-headed goose (*Anser indicus*) and Andean goose (*Chloephaga melanoptera*). 2010. *Mol. Phylogenet. Evol.* Aug, 56(2): 649-58
- Liang, Y. et al.: The Crystal Structure of Bar-headed Goose Hemoglobin in Deoxy Form: The Allosteric Mechanism of a Hemoglobin Species with High Oxygen Affinity. 2000. *Journal of Molecular Biology*, Vol. 313, No. 1, pp. 123-137.

KAPITEL 7. CORONAVIRUS

- Sallard, E. et al.: Tracing the origins of SARS-COV-2 in coronavirus phylogenies: a review. 2021. *Environ Chem Lett.*;19(2): 769-785 DOI: 10.1007/s10311-020-01151-1
- Temmam, s. et al.: Bat coronaviruses related to SARS-CoV-2 and infectious for human cells. 2022. *Nature* volume 604, side 330-336
- New England Biolabs: Furin. <https://www.neb.com/en/products/p8077-furin>

KAPITEL 8. VACCINATIONER OG EPITOPER

- Statens Seruminstitut: Risikovurderinger ifm. covid-19. Bilag 1 Risikovurdering af human sundhed ved fortsat minkavl, 3. november 2020
- Prince, T. et al.: SARS-CoV-2 Infections in Animals: Reservoirs for Reverse Zoonosis and Models for Study. 2021. *Viruses* 2021, 13(3), 494; DOI: 10.3390/v13030494
- Bayarri-Olmos, R. et al.: The SARS-CoV-2 Y453F mink variant displays a pronounced increase in ACE-2 affinity but does not challenge antibody neutralization. 2021. *J. Biol. Chem.* Jan-Jun: 296

KAPITEL 9. POLYPLOIDI

- Clarkson, J. J. et al.: Phylogenetic relationships in *Nicotiana* (Solanaceae) inferred from multiple plastid DNA regions. 2004. *Molecular Phylogenetics and Evolution* 33(1): 75-90.