

Hankedata

Sari Timonen

Mikrobiologian ja biotekniikan osasto
Elintarvike- ja ympäristötieteiden laitos

Sekvenssidata

- Tunnistusgeenit
- Metagenomit
- Koko genomit
- Funktionaaliset geenit

Yhdistelmädata

- Sukupuut
- Lajinimet

EMBL 1974

- European Molecular Biology Laboratory
- 1981 EMBL perustaa ensimmäisen keskitetyn sekvenssitietokannan (EMBL Data Library)
- DNA Data Bank of Japan DDBJ yhteistyöhön
- 1988 kansainvälinen sekvenssidataverkosto EMBnet

NCBI 1988

- National Center for Biotechnology Information
- 1988 FASTA
 - sekvenssien linjaus datapankkidataan
- 1990 BLAST
 - sekvenssien nopea vertailu ja löytäminen
- 1991 Entrez
 - sekvensseihin liittyvän tiedon löytäminen

GenBank 1992

- Kaikkien sekvenssipankkien yhteinen keskustietokanta
- NCBI koordinaattorina
- 1995 Genomes
 - genomitiedon organisointi

Sekvenssipankin käyttö

- Julkaiseminen edellyttää sekvenssien säilömistä sekvenssipankkiin
- Suora käyttö
- Epäsuora käyttö

Sekvensspankin suora käyttö

TCAGTAACACGTAGTCAACCTGCCCTGGAGACGCGAATAACCCCGGGAA
ACTGGGATTAATGCGTGATAGGTCACCTCATCTGGAAAGAGAGATGGCTT
AAAGGGGTACGCGGGGCTTCTTCCGCGGATCTGCTCCAGGATGGGACTGC
GTCCGATCAGGCTGTTGGCGGGGTAATGGCCCACCAAACCTGTAACCGG
TACGGGCCTTGAGAGAGGTGGCCCGGAGATGGACACTGAGAGAAGGGT
CCAGGTCCTACGGGGCGCAGCAGGCGCGAAACCTTCGCAATGCGCGAAA
GCGTGACGAGGTTAATCCGAGTGACTTCCGCTGAGGAGGTCTTTGTCAG
CTATAAATAGGCGGGCGAATAAGGGGAGGGGCAAGCCTGGTGTGAGCCGC
CGCGTAATACCAGCTCCTCGAGTGGTCGGGGGCGATTATTGGGCCTAAAGC
ATCCGTAACCGCTTCCCTACCTCTTCTCTTAATCCAAACCGCTTAACCGCTT
GACCTG
TACTCCG
GCGAAG
GGAGCG
TAGA

BLAST®HomeRecent ResultsSaved StrategiesHelp

Basic Local Alignment Search Tool

BLAST finds regions of similarity between biological sequences. The program compares nucleotide or protein sequences to sequence databases and calculates the statistical significance. [Learn more](#)

NEWS

Magic-BLAST 1.1.0 available
The new version offers support for HTTPS, accession.version as the primary sequence identifier, and fixes problems with SAM flag values.
Mon, 07 Nov 2016 09:00:00 EST [More BLAST news...](#)

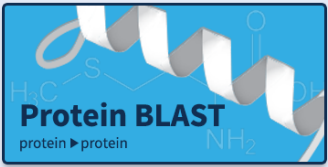
Web BLAST



Nucleotide BLAST
nucleotide ► nucleotide

blastx
translated nucleotide ► protein

tblastn
protein ► translated nucleotide



Protein BLAST
protein ► protein

BLAST Genomes

[Human](#)[Mouse](#)[Rat](#)[Microbes](#)

Sekvenssipankin suora käyttö

Sequences producing significant alignments:

Select: [All](#) [None](#) Selected: 0

AT TT Alignments Download GenBank Graphics Distance tree of results							
	Description	Max score	Total score	Query cover	E value	Ident	Accession
☐	Uncultured crenarchaeote partial 16S rRNA gene, isolate DGGE band PsPiMm79-1	1249	1249	100%	0.0	100%	AM903346.1
☐	Uncultured crenarchaeote partial 16S rRNA gene, isolate DGGE band PsPiMm75-1	1202	1202	100%	0.0	99%	AM903347.1
☐	Uncultured crenarchaeote clone PsRTW_6 16S ribosomal RNA gene, partial sequence	1196	1196	100%	0.0	99%	GU815327.1
☐	Uncultured crenarchaeote partial 16S rRNA gene, clone A109-10	1191	1191	100%	0.0	99%	AM291984.1
☐	Uncultured crenarchaeote clone PsMMC_36 16S ribosomal RNA gene, partial sequence	1189	1189	100%	0.0	99%	GU815307.1
☐	Uncultured crenarchaeote partial 16S rRNA gene, clone A109-07	1187	1187	100%	0.0	99%	AM291983.1
☐	Uncultured crenarchaeote partial 16S rRNA gene, clone A109-05	1187	1187	100%	0.0	99%	AM291982.1
☐	Uncultured archaeon clone A12_27 186bp 16S ribosomal RNA gene, partial sequence	1173	1173	100%	0.0	98%	GU223433.1
☐	Uncultured archaeon clone V12_06 186bp 16S ribosomal RNA gene, partial sequence	1169	1169	100%	0.0	98%	JX984831.1
☐	Uncultured crenarchaeote clone cPsRTM_13 16S ribosomal RNA gene, partial sequence	1164	1164	100%	0.0	98%	GU815304.1
☐	Uncultured crenarchaeote clone PsRTM_29 16S ribosomal RNA gene, partial sequence	1157	1157	100%	0.0	98%	GU815320.1
☐	Uncultured archaeon clone CS19-28 16S ribosomal RNA gene, partial sequence	1151	1151	100%	0.0	97%	KJ632729.1
☐	Uncultured archaeon gene for 16S rRNA, partial sequence, clone: CASN28	1137	1137	100%	0.0	97%	AB364915.1
☐	Uncultured archaeon clone Amb_16S_arch_496 16S ribosomal RNA gene, partial sequence	1137	1137	100%	0.0	97%	EF020917.1
☐	Uncultured Front Range soil crenarchaeote FRD38 16S ribosomal RNA gene, partial sequence	1137	1137	100%	0.0	97%	AY016504.1
☐	Uncultured thaumarchaeote clone KS9_21 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	JN853757.1
☐	Uncultured archaeon clone A_P2K5f 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	GU127862.1
☐	Uncultured archaeon clone A_P2K29f 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	GU127861.1
☐	Uncultured archaeon clone CHRA D36 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	GU366965.1
☐	Uncultured archaeon clone Amb_16S_arch_6581 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	EF021606.1
☐	Uncultured archaeon clone Amb_16S_arch_4171 16S ribosomal RNA gene, partial sequence	1133	1133	100%	0.0	97%	EF021384.1
☐	Uncultured archaeon clone A_P2K2f 16S ribosomal RNA gene, partial sequence	1128	1128	100%	0.0	97%	GU127863.1

Sekvenssipankin suora käyttö

 [Resources](#) [How To](#) [Sign in to NCBI](#)

Nucleotide

Nucleotide

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PopSet

PubMed

Taxonomy

LinkOut to external resources

Ribosomal Database Project II

[Ribosomal Database Project II]

SILVA SSU Database

[SILVA]

Recent activity

Turn Off Clear

Uncultured thaumarchaeote clone RSC_ArcRR_A02 16S ribosomal RNA gene, partial sequence

GenBank: KM214092.1

[FASTA](#) [Graphics](#) [PopSet](#)

Go to: ☒

LOCUS

KM214092

1093 bp

DNA

linear

ENV 03-FEB-2015

DEFINITION

Uncultured thaumarchaeote clone RSC_ArcRR_A02 16S ribosomal RNA gene, partial sequence.

ACCESSION

KM214092

VERSION

KM214092.1

KEYWORDS

ENV.

SOURCE

uncultured thaumarchaeote

ORGANISM

[uncultured thaumarchaeote](#)

REFERENCE

1 (bases 1 to 1093)

AUTHORS

Barton,H.A., Giarrizzo,J.G., Suarez,P., Robertson,C.E., Broering,M.J., Banks,E.D., Vaishampayan,P.A. and Venkateswaran,K.

TITLE

Microbial diversity in a Venezuelan orthoquartzite cave is dominated by the Chloroflexi (Class Ktedonobacterales) and Thaumarchaeota Group I.1c

JOURNAL

Front Microbiol 5, 615 (2014)

PUBMED

[25505450](#)

REMARK

Publication Status: Online-Only

REFERENCE

2 (bases 1 to 1093)

AUTHORS

Giarrizzo,J.G., Suarez,P., Broering,M., Banks,E.D., Vaishampayan,P.A., Venkateswaran,K. and Robertson,C.E.

TITLE

Direct Submission

JOURNAL

Submitted (20-JUL-2014) Biology, University of Akron, 185 E. Mill St, Akron, OH 44325, USA

COMMENT

##Assembly-Data-START##

Sequencing Technology :: Sanger dideoxy sequencing

##Assembly-Data-END##

FEATURES

Location/Qualifiers

source

1..1093

/organism="uncultured thaumarchaeote"

/mol_type="genomic DNA"

/isolation_source="sediment from sampling site inside Roraima Sur Cave (orthoquartzite cave)"

/db_xref="taxon:651141"

/clone="RSC_ArcRR_A02"

Uncultured thaumarchaeote clone RSC_ArcRR_A02 16S ribosomal RNA gene, partial sequence

Nucleotide

A Brief History of NCBI's Formation and Growth - The NCBI Handbook

N,N-Dimethyl-p-phenylenediamine dihydrochloride-based method for the

PubMed

There Are Three Common Types of

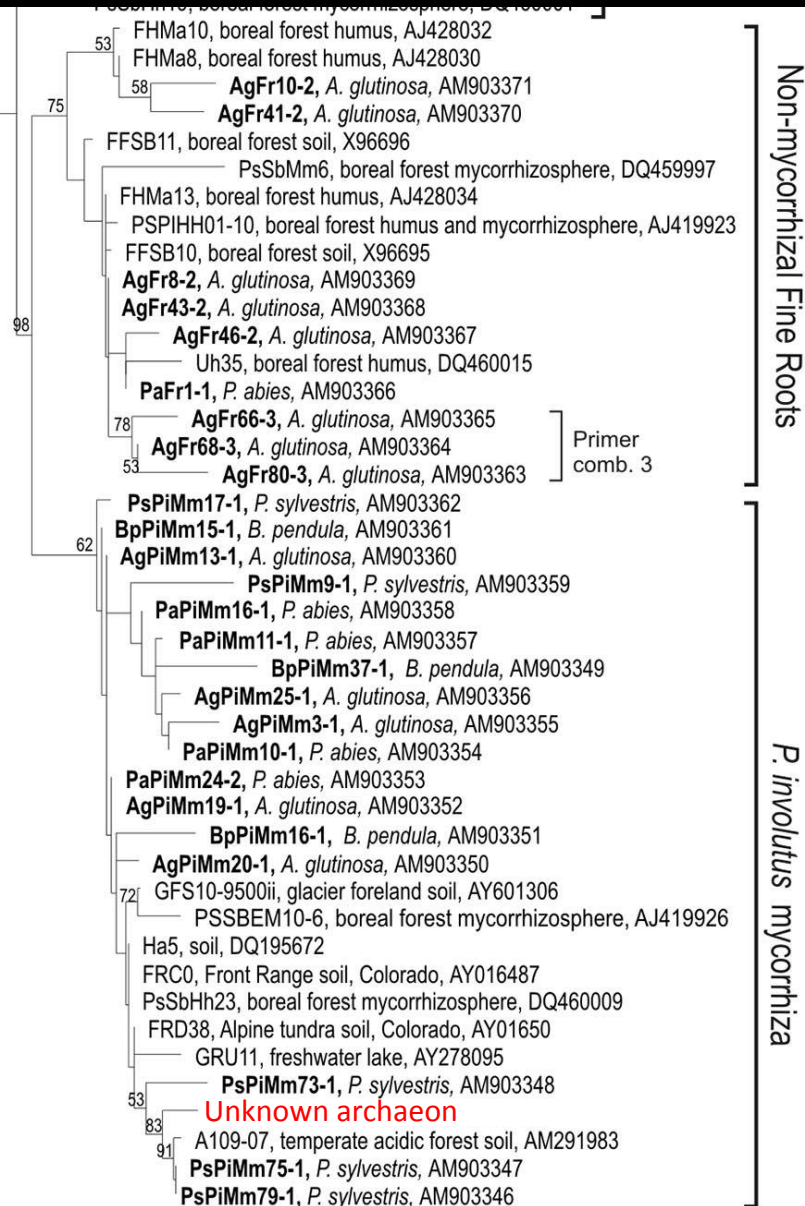
Sekvenssipankin epäsuora käyttö

- Omat linjaukset
- Yhteiset kuratoidut linjaukset



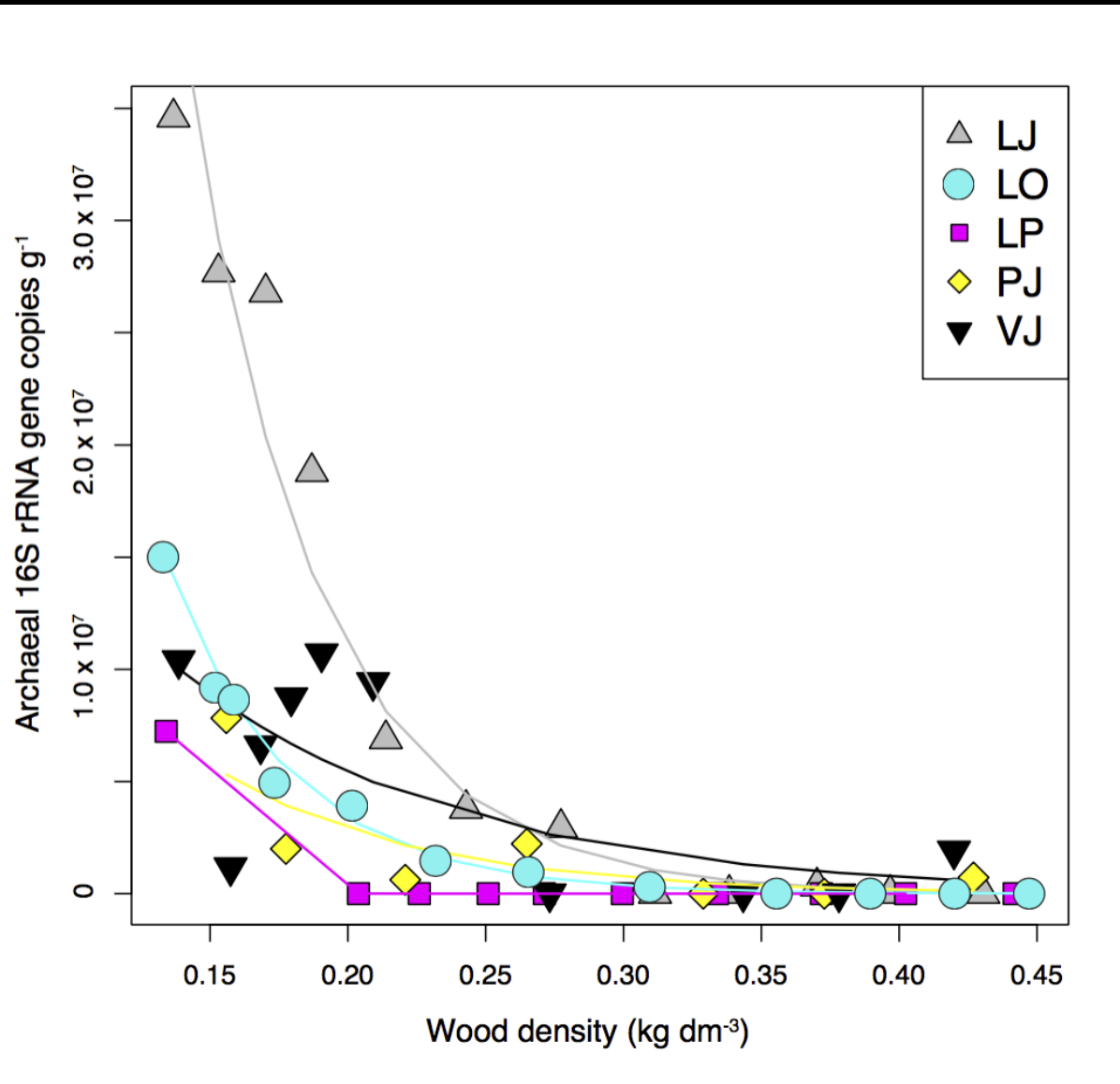
Sekvenssipankin epäsuora käyttö

Sukupuut



Thaumarchaeota 1.1c

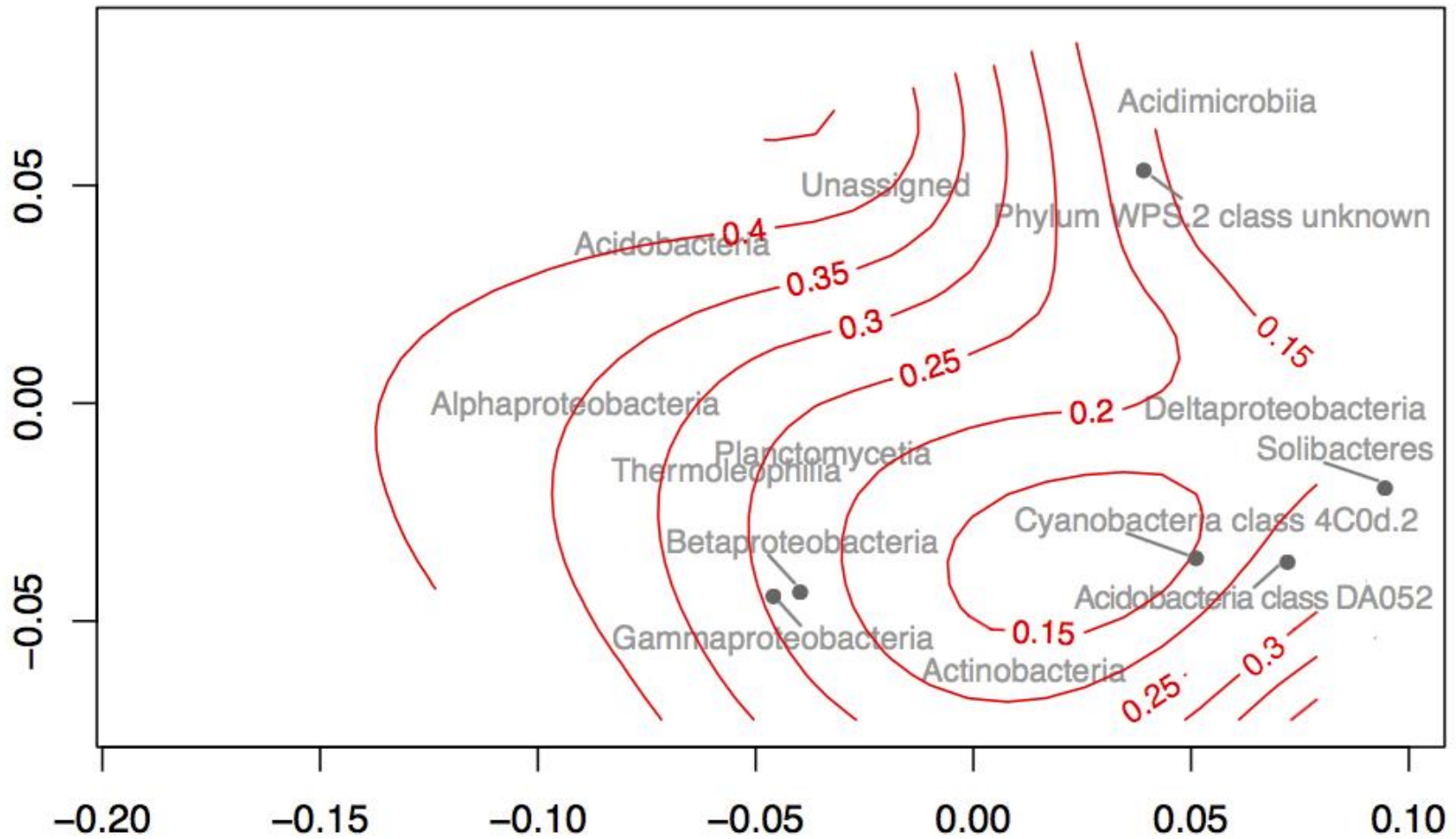
Eliöiden määrä



Metagenomit

Accession	Sample Name	Organism	Tax ID	BioProject id
SAMN03742615	LJ1	wood decay metagenome	1593443	285725
SAMN03758562	LJ7	wood decay metagenome	1593443	285725
SAMN03758563	LJ10	wood decay metagenome	1593443	285725
SAMN03758564	LO1	wood decay metagenome	1593443	285725
SAMN03758565	LO6	wood decay metagenome	1593443	285725
SAMN03758566	LO11	wood decay metagenome	1593443	285725
SAMN03758567	SI1	wood decay metagenome	1593443	285725
SAMN03758568	SI5	wood decay metagenome	1593443	285725
SAMN03758569	PJ1	wood decay metagenome	1593443	285725
SAMN03758570	PJ8	wood decay metagenome	1593443	285725
SAMN03758571	VJ1	wood decay metagenome	1593443	285725
SAMN03758572	VJ10	wood decay metagenome	1593443	285725

Monimuuttuja-analyysit



Vastepinta, bakteereiden yleisyys puun tiheyden mukaan, kg/dm^3

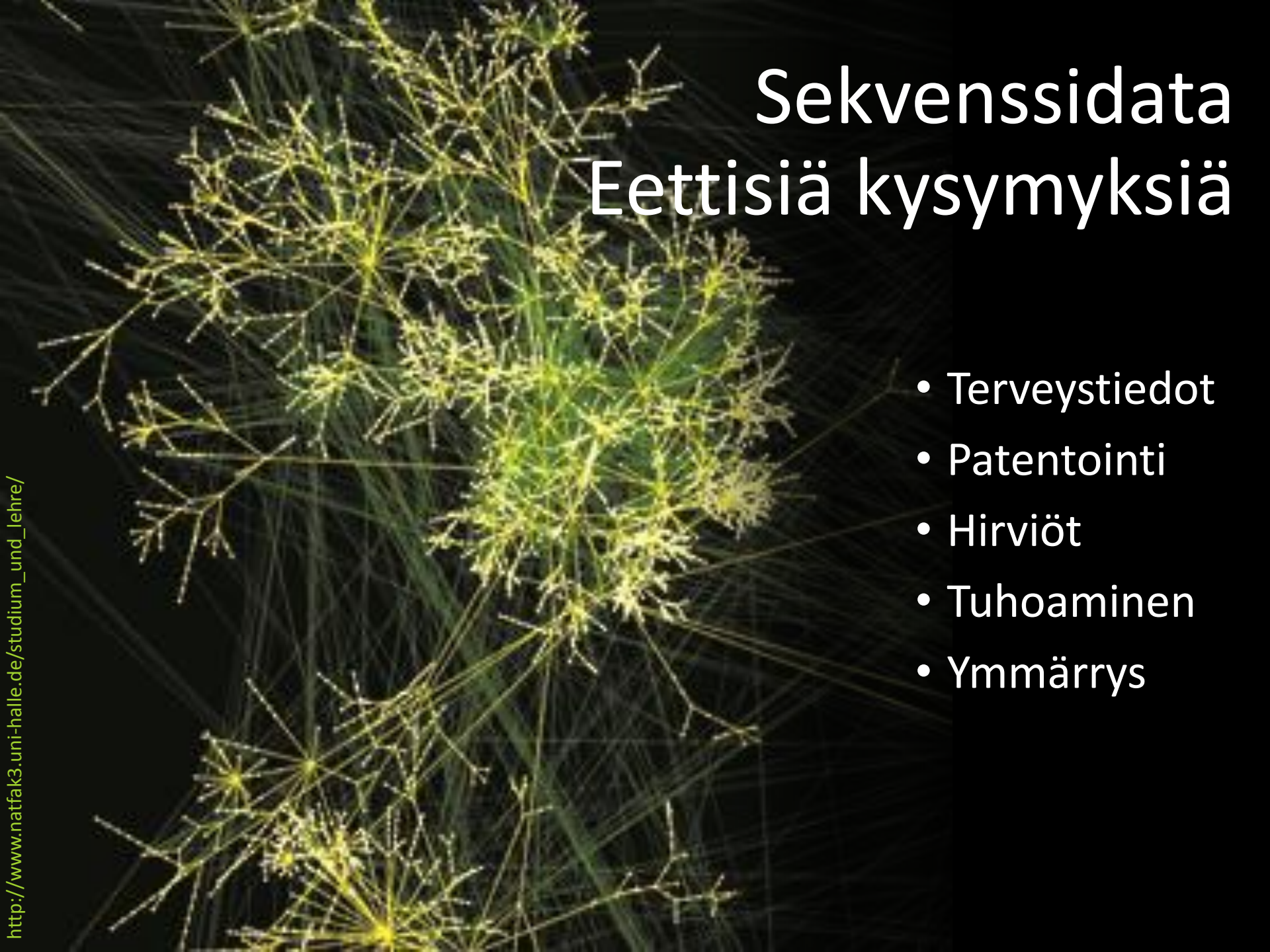
Koko genomit

- Tieto siitä, millainen eliö on
- Toiminta, rakenteet, sietokyky, merkitys...
- Suurin osa eliöistä on ihmissilmälle näkymättömiä, eikä niitä osata kasvatata

Funktionaalisten geenien analyysit

- Tieto eliöiden rakenteista ja toiminnasta
- Tieto toiminnallisista häiriöistä





Sekvenssidata Eettisiä kysymyksiä

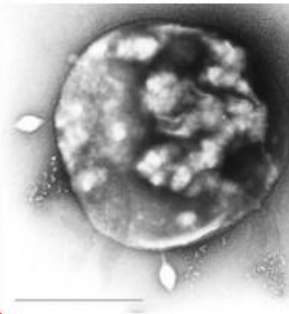
- Terveystiedot
- Patentointi
- Hirviöt
- Tuhoaminen
- Ymmärrys

Yhdistelmädata

- Eliöiden sukulaisuussuhteet
 - DNA-datat
 - Morfologinen data
 - Funktionaalinen data
 - Ryhmien yhdistely
- Eliöiden lajinimet
 - Sukulaisuussuhteet
 - Historia
 - Säännöt ja päätökset

Tree of Life project

Life on Earth

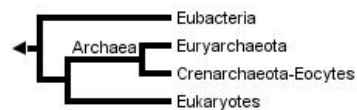


The rooting of the Tree of Life, and the relationships of the major lineages, are controversial. The monophyly of Archaea is uncertain, and recent evidence for ancient lateral transfers of genes indicates that a highly complex model is needed to adequately represent the phylogenetic relationships among the major lineages of Life. We hope to provide a comprehensive discussion of these issues on this page soon. For the time being, please refer to the papers listed in the [References](#) section.

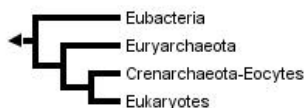
Discussion of Phylogenetic Relationships

Two alternative views on the relationship of the major lineages (omitting viruses) are shown below

The "archaea tree":



The "eocyte tree":

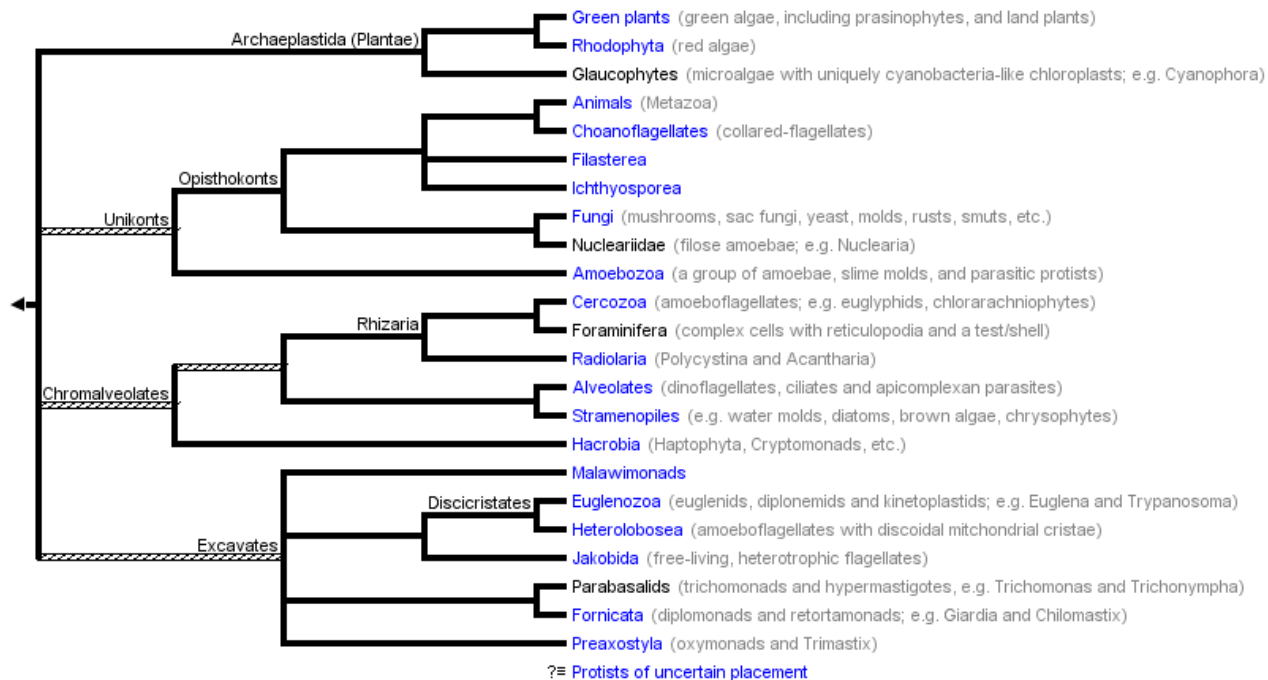
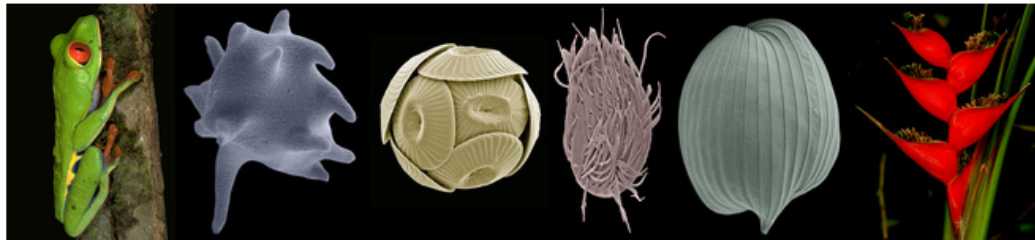


Tree of Life project

Eukaryotes

Eukaryota, Organisms with nucleated cells

Patrick Keeling, Brian S. Leander, and Alastair Simpson



Lajien nimet ja sukulaisuussuhteet



Species Fungorum

[GSD Species Synonymy](#)

Current Name:

[Suillus bovinus \(L.\) Roussel](#), *F. Calvados*: 34 (1796)

Synonymy:

[Boletus bovinus L.](#), *Sp. pl.* **2**: 1177 (1753)

[Agaricus bovinus \(L.\) Lam.](#), *Encycl. Méth. Bot.* **1**(1): 52 (1783)

[Suillus bovinus \(L.\) Roussel](#), *F. Calvados*: 34 (1796) **var. bovinus**

[Viscipellis bovina \(L.\) Quél.](#), *Enchir. fung.* (Paris): 157 (1886)

[Ixocomus bovinus \(L.\) Quél.](#), *Fl. mycol. France* (Paris): 413 (1888)

[Suillus bovinus \(L.\) Kuntze](#), *Revis. gen. pl.* (Leipzig) **3**(2): 535 (1898)

[Mariaella bovina \(L.\) Šutara](#), *Česká Mykol.* **41**(2): 76 (1987)

[Boletus bovinus L.](#), *Sp. pl.* **2**: 1177 (1753) **var. bovinus**

[Boletus aestivus Schlotterb.](#), *Acta Helv. Phys.-math.* **4**: 54, tab. 5:2 (1760)

[Boletus bovinus var. aestivus \(Schlotterb.\) J.F. Gmel.](#), *Systema Naturae*, Edn 13 **2**(2): 1432 (1792)

[Boletus bovinus var. congoensis Beeli](#), *Bull. Soc. R. Bot. Belg.* **58**: 210 (1926)

[Boletus congoensis \(Beeli\) Heinem.](#), *Bull. Jard. bot. État Brux.* **21**: 331 (1951)

[Boletus bovinus var. luteoporus Beneš](#), *Čas. česk. houb.* **22**: 6 (1942)

[Boletus bovinus var. moravicus Beneš](#), *Čas. česk. houb.* **22**: 5 (1942)

[Boletus bovinus var. viridocaerulescens A. Pearson](#), *Trans. Br. mycol. Soc.* **33**(3-4): 314 (1950)

[Suillus bovinus var. viridocaerulescens \(A. Pearson\) Singer](#) [as '[viridicaerulescens](#)'], *Sydowia* **15**(1-6): 82 (1962)

Position in classification:

Suillaceae, Boletales, Agaricomycetidae, Agaricomycetes, Basidiomycota, Fungi

Synonymy Contributor(s):

Kew Mycology (2015); [Basidiomycota Checklist](#)

[back to previous page](#)

Index Fungorum

Yhdistelmädata

Eettisiä kysymyksiä ja käytännön pulmia

- Meriittilaskurit
- Oikeudet
- Ylläpito

Kiitos!

