Resource Summary Report

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Elephant shark genome sequencing

RRID:SCR_013158
Type: Tool

Proper Citation

Elephant shark genome sequencing (RRID:SCR_013158)

Resource Information

URL: http://esharkgenome.imcb.a-star.edu.sg

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Description: To explore the elephant shark genome, we have conducted a survey-sequencing and comparative analysis of the elephant shark genome in collaboration with J. Craig Venter Institute. The elephant shark sequences generated under this project have been deposited at GenBank under the project accession number AAVX01000000. The sequences can also be searched using BLAST and retrieved here. Cartilaginous fishes (Chondrichthyes) represented by sharks, rays, skates and chimaeras, are phylogenetically the oldest group of living jawed vertebrates. They constitute an important group for our understanding of the origins of the complex developmental and physiological systems of jawed vertebrates. They are also an useful outgroup for bony vertebrates such as tetrapods and teleost fishes and help in identifying specialized features that have led to the evolution of diverse groups of bony vertebrates. The elephant shark (Callorhinchus milii), also known as the elephant fish and ghost shark, is a chimaera belonging to the Order Chimaeriformes and Family Callorhynchidae. It has the smallest genome among the known cartilaginous fish genomes. Thus, it was proposed as a model cartilaginous fish genome for whole-genome sequencing and comparative analysis (Venkatesh et al. 2005. Curr. Biol. 15: R82-R83). The following resources of the elephant shark are available for the scientific community: *Elephant Shark 1.4x assembly fasta sequences zipped 227 megabytes *Genomic DNA *~8x coverage BAC library (average insert size, ~150 kb) *cDNA libraries (under construction) *cDNA (dated 11 April 2008) with orthologs in 5 vertebrates (human, opossum, chicken, frog, fugu)

Resource Type: data or information resource, database, service resource

Defining Citation: PMID:9254694, PMID:17185593, PMID:17407382

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Resource Name: Elephant shark genome sequencing

Resource ID: SCR_013158

Alternate IDs: nif-0000-30511

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Ratings and Alerts

No rating or validation information has been found for Elephant shark genome sequencing.

No alerts have been found for Elephant shark genome sequencing.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 83 mentions in open access literature.

Listed below are recent publications. The full list is available at NIF.

Wang XP, et al. (2022) Activation by cleavage of the epithelial Na+ channel ? and ? subunits independently coevolved with the vertebrate terrestrial migration. eLife, 11.

Dospinescu VM, et al. (2019) Structural determinants of CO2-sensitivity in the ? connexin family suggested by evolutionary analysis. Communications biology, 2, 331.

Barney E, et al. (2019) Elephant shark melanocortin receptors: Novel interactions with MRAP1 and implication for the HPI axis. General and comparative endocrinology, 272, 42.

Shao F, et al. (2018) FishTEDB: a collective database of transposable elements identified in the complete genomes of fish. Database : the journal of biological databases and curation, 2018.

Kaizuka T, et al. (2018) Comparative analysis of palmitoylation sites of serotonin (5-HT) receptors in vertebrates. Neuropsychopharmacology reports, 38(2), 75.

Tenno M, et al. (2018) Cbf?2 controls differentiation of and confers homing capacity to prethymic progenitors. The Journal of experimental medicine, 215(2), 595.

Parreira B, et al. (2018) Persistence of the ABCC6 genes and the emergence of the bony skeleton in vertebrates. Scientific reports, 8(1), 6027.

Cardoso JCR, et al. (2018) Evolution of the glucagon-like system across fish. General and comparative endocrinology, 264, 113.

Biscotti M.A., et al. (2017) The small non-coding RNA processing machinery of two living fossil species, lungfish and coelacanth, gives new insights into the evolution of the Argonaute protein family. Genome biology and evolution, 9(3), 438.

Alves RN, et al. (2017) Duplication of Dio3 genes in teleost fish and their divergent expression in skin during flatfish metamorphosis. General and comparative endocrinology, 246, 279.

Costa RA, et al. (2017) Evolution of the angiopoietin-like gene family in teleosts and their role in skin regeneration. BMC evolutionary biology, 17(1), 14.

Mateus AP, et al. (2017) Chronic stress impairs the local immune response during cutaneous repair in gilthead sea bream (Sparus aurata, L.). Molecular immunology, 87, 267.

Céspedes HA, et al. (2017) Evolution of the ?2-adrenoreceptors in vertebrates: ADRA2D is absent in mammals and crocodiles. General and comparative endocrinology, 250, 85.

Åberg E, et al. (2017) Evolution of the p53-MDM2 pathway. BMC evolutionary biology, 17(1), 177.

Zavala K, et al. (2017) Evolution of the ?-adrenoreceptors in vertebrates. General and comparative endocrinology, 240, 129.

Buechi HB, et al. (2017) Evolution of specificity in cartilaginous fish glycoprotein hormones and receptors. General and comparative endocrinology, 246, 309.

Voldoire E, et al. (2017) Expansion by whole genome duplication and evolution of the sox gene family in teleost fish. PloS one, 12(7), e0180936.

Marandel L, et al. (2017) Evolutionary history of glucose-6-phosphatase encoding genes in vertebrate lineages: towards a better understanding of the functions of multiple duplicates. BMC genomics, 18(1), 342.

Onimaru K, et al. (2016) The fin-to-limb transition as the re-organization of a Turing pattern. Nature communications, 7, 11582.

Funato N, et al. (2016) Specification of jaw identity by the Hand2 transcription factor. Scientific reports, 6, 28405.