**Abstract**

The Genome Network Project aims to elucidate biological functions through genome searches in a reconstructed network of human transcriptional control. At the National Institute of Genetics (Japan), we have combined proprietary data with existing genomic information to construct a comprehensive database integrated into a browsable service, denominated “Genome Network Platform”.

**Main features**

- **Genome Explorer**
  Genomic browser to search data. For instance, CAGE data (20 bp transcript tags from 5’ end) produced by RIKEN can be localized in the genome.
- **PPI Network**
  A PPI network based on Y2H experiments (Hitachi) and public data. The shortest interaction path between proteins can be calculated with this feature.
- **Expression Profile**
  Gene expression patterns can be clustered to produce a heat map across tissues. Given an expression pattern, co-expressed genes can also be found.
- **Comparison Viewer**
  Compare genomic areas between selected genes. Based on our proprietary CAGE data, transcripts and transcription start sites can be browsed in the genome.

**Gene Network analysis capability**

From a complex PPI network, subnetworks corresponding to particular conditions can be chosen.

Emphasized conditions:
- Coexpressed genes/tissue specificity obtained from GNP data
- Disorders: OMIM,
- Subcellular location: GO

**Coordination of GNP web services**

- Case study analysis
- Applications
- GNP public result summary
- IP browsing system
- Raw data download

The disclosure of results of the Genome Network Project is coordinated through a series of web services. Queries on particular candidate genes can be performed, providing a variety of detailed information. Raw data can be directly downloaded as well.

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**Research projects under the Genome Network Platform:**
- Cis-element prediction
- Effect of alternative splicing in PPI networks
- PPI data collection through text mining

Generated intellectual proprietary data is browsable. These include patent data, academic publications, bibliographic data, etc.

**Visualization tools to browse integrated data of the GNP.** Coordination of several data viewers to make best use of browsing capabilities.

**Summary of results by Genome Network Project.**

**Genome Network Project experimental data.**

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**http://genomenetwork.nig.ac.jp**