

# Example BEL Script

The following is an example of a BEL Script document created from a PubMed abstract.

Additional BEL Script examples can be found [here](#).

```
#####  
#  
#  
#  
# Example BEL Script.  
#  
#  
# This BEL Script encodes BEL Statements extracted from PubMed ID 11340296  
#  
#  
#  
#####  
#  
  
#####  
#  
#  
# Properties Section  
# This section is used to define properties associated with the document as a  
  
# whole.  
#  
# Set the Citation for the Document. This is generally used to define who  
# created the document.  
  
SET DOCUMENT Name = "Example BEL Script Document"  
  
SET DOCUMENT Authors = "Selventa"  
  
SET DOCUMENT Version = "1.0"  
  
SET DOCUMENT Copyright = "Copyright (c) 2011, Selventa. All Rights Reserved"  
  
# Set additional information for the Document. This is generally used to  
# define why  
# the document was created and what it can be used for.  
  
SET DOCUMENT Description = "This document provides an illustration of the  
# structure  
# of a BEL Script document and the encoding of BEL Statements"  
  
#####  
#  
#  
# Definitions Section  
# This section is used to define the Namespaces and Annotation Types that
```

```

will
# be used within the document.
#
# First define the Namespaces for term parameters. One Namespace can be set
as
# the DEFAULT Namespace for the document

DEFINE DEFAULT NAMESPACE HGNC AS URL \
  "http://.../hgnc-approved-\
  symbols.belns"

DEFINE NAMESPACE EGID AS URL \
  "http://.../entrez-gene-ids-hmr.belns"

# Next define Annotation Types to be used to annotate the BEL Statements that
are
# defined later on

# Here we set up a species annotation using the pre-defined species
annotation type

# This species annotation uses NCBI TAX IDs

DEFINE ANNOTATION Species AS URL \
  "http://.../annotation/species-taxonomy-id.belanno"

# Define a Tissues annotation type

DEFINE ANNOTATION Tissue AS URL \
  "http://.../annotation/mesh-tissue.belanno"

# Define an ExposureTime Annotation Type using a REGEX pattern

DEFINE ANNOTATION ExposureTime AS PATTERN "[0-6]hr"

#####
#
#
# Statements Section
# This section is used to encode BEL Statements using the Namespaces and
# Annotation Types previously defined.
#
# Set the citation for the PubMed article being used. The Citation and
Evidence
# Annotation types are part of the BEL specification and don't need to be
defined as
# Annotation Types
# Set the statement group. All following statements will be assigned to this
group

SET STATEMENT_GROUP = "PubMed 11340296"

```

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SET Citation = {"PubMed", "Exp Clin Immunogenet, 2001;18(2) 80-5",
"11340296"}

# Set document-defined annotation values

SET Species = 9606

SET Tissue = "t-cells"

# Create an Evidence Line for a block of BEL Statements

SET Evidence = "Here we show that interferon-alpha
(IFNalpha) is a potent producer of SOCS expression in human T cells, as high
expression of CIS, SOCS-1, SOCS-2,
and SOCS-3 was detectable after IFNalpha stimulation. After 4 h of
stimulation CIS, SOCS-1, and SOCS-3 had returned to baseline
levels, whereas SOCS-2 expression had not declined."

SET ExposureTime = "4hr"

# Create some BEL Statements. The following statements will be annotated with
Citation,

# Species, Tissue, Evidence and ExposureTime annotation type values defined
above.

p(HGNC:IFNA1) -> r(HGNC:CISH) // protein abundance of IFNA1 increases the rna
\
    abundance of CISH

p(HGNC:IFNA1) -> r(HGNC:SOCS1) // protein abundance of IFNA1 increases the
rna \
    abundance of SOCS1

p(HGNC:IFNA1) -> r(HGNC:SOCS2) // protein abundance of IFNA1 increases the
rna \
    abundance of SOCS2

p(HGNC:IFNA1) -> r(HGNC:SOCS3) // protein abundance of IFNA1 increases the
rna \
    abundance of SOCS3

# Reset the Evidence line and ExposureTime Annotation Type values

SET Evidence = "In contrast, after IL-2 induction neither CIS, SOCS-1, nor
SOCS-2
expression levels declined after 6h."

SET ExposureTime = "6hr"

# The following statements will be annotated with Citation, Species,
# Tissue, Evidence and ExposureTime annotation type values defined above.

```

```
p(HGNC:IL2) -> r(HGNC:CISH) // protein abundance of IL2 increases the
rna \
abundance of CISH

p(HGNC:IL2) -> r(HGNC:SOCS1) // protein abundance of IL2 increases the
rna \
abundance of SOCS1

p(HGNC:IL2) -> r(HGNC:SOCS2) //protein abundance of IL2 increases the
rna \
```

abundance of SOSC2