

# DEVELOPING AN ANATOMICAL DICTIONARY FOR THE ADULT MOUSE

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## My “tasks”:

- Confirm terms as mouse structures
- Expand the vocabulary
  - Add structures
  - Refine detail
- Examine/re-examine hierarchical relationships
- Enter into data file using DAG edit
- Maintain ‘master copy’ of ontology

## Some “guidelines”:

- Correspond with the Anatomical Dictionary for Mouse Development, i.e. at Theiler Stage 26
- Include structures from the ‘abridged’ TS28 AD currently in use by GXD for annotating data
- Exclude cell types
- DAG format to provide alternative hierarchies, but limit their use



### Adult Mouse Anatomical Dictionary Browser

The Anatomical Dictionary for the Adult Mouse organizes anatomical structures for the postnatal mouse (Theiler stage 28) spatially and functionally, using 'is a' and 'part of' relationships. The ontology will be used to describe expression data for the adult mouse and phenotype data pertinent to anatomy in standardized ways. This browser can be used to view anatomical terms and their relationships in a hierarchical display.

#### Browse the Anatomical Dictionary for the Adult Mouse

[Adult Mouse Anatomical Dictionary](#)

#### Search the Anatomical Dictionary for the Adult Mouse

Enter any text string or full MA accession number (include 'MA:' prefix)

Query:

Your input is welcome. Please [contact](#) us with suggestions, additions, or questions about the Anatomical Dictionary for the Adult Mouse.

The Anatomical Dictionary for the Adult Mouse has been developed by Terry Hayamizu, Mary Mangan, John Cornadi and Martin Ringwald as part of the Gene Expression Database (GXD) Project. GXD is funded by NIH grant HD33745. M.M. and J.C. were supported by postdoctoral fellowships F32 HD08435-01 and F32 HG00215-01.

## Some “rules”:

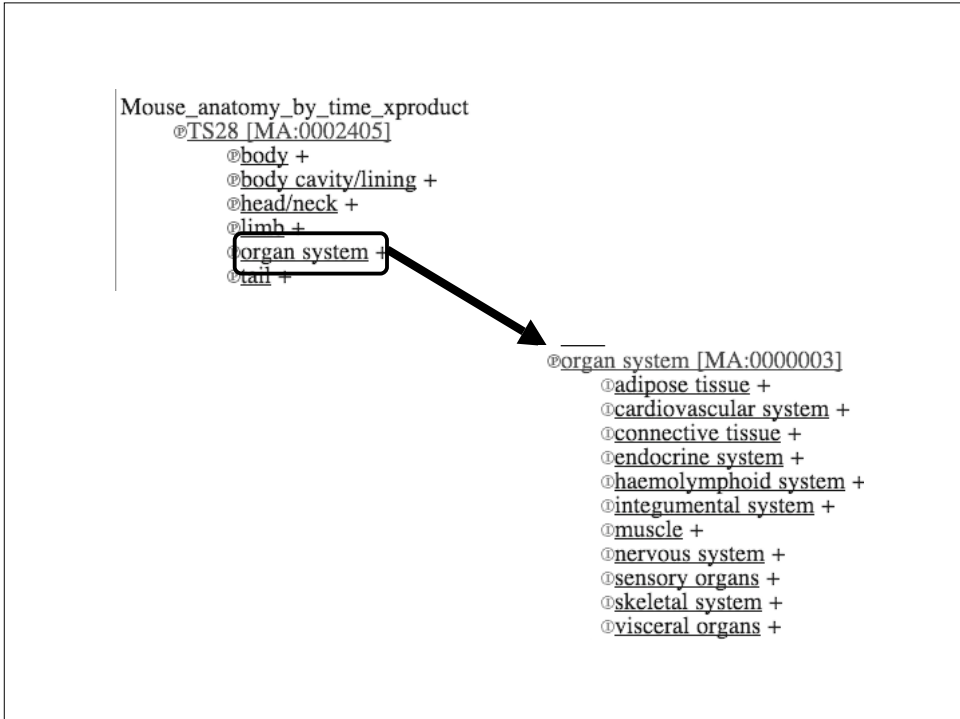
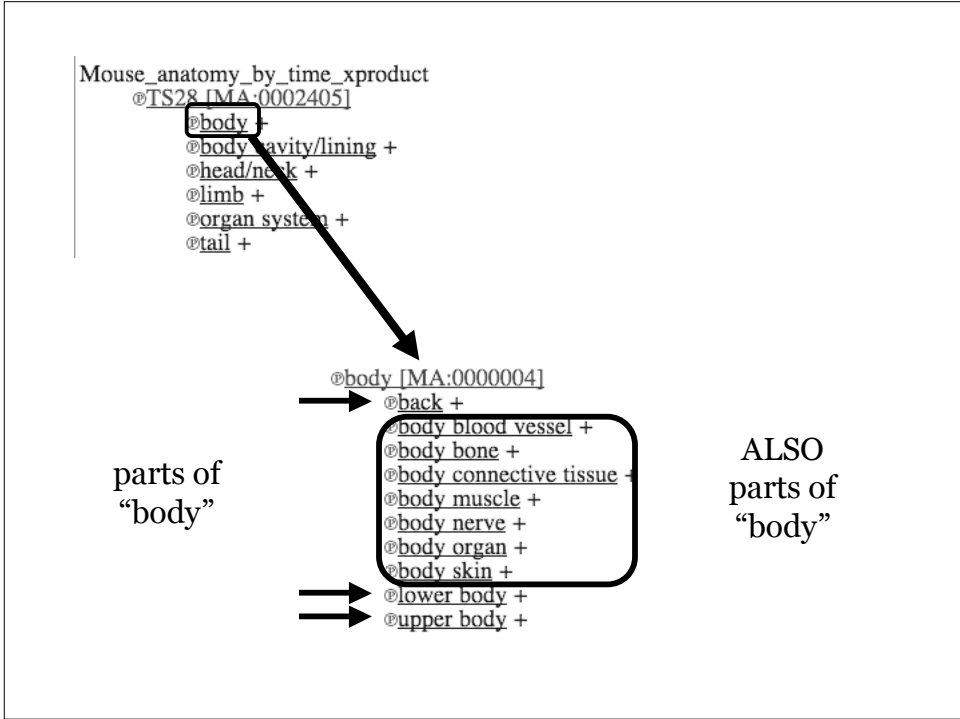
- consistent nomenclature
  - preceded by superstructure name, in noun form (not adjective), when possible
  - ‘common’ names when appropriate
- alpha-numeric ordering
- all lower case; no capitals
- avoid use of plurals
- avoid use of “of” and “and”

MA term:	<b>TS28</b>
MA id:	<b>MA:0002405</b>
Definition:	<b>postnatal mouse</b>
Number of paths to term:	<b>1</b>

① denotes an 'is-a' relationship  
② denotes a 'part-of' relationship

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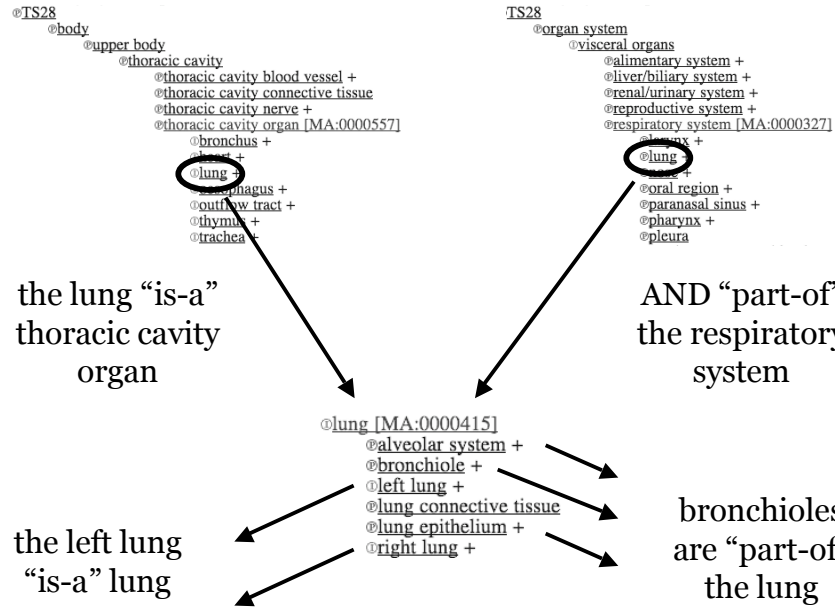
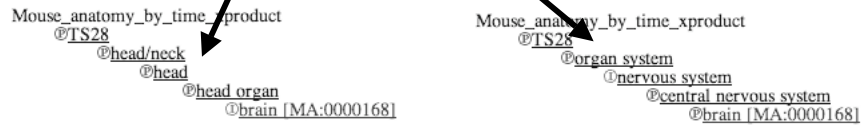
Mouse\_anatomy\_by\_time\_xproduct  
@TS28 [MA:0002405]  
②body +  
②body cavity/lining +  
②head/neck +  
②limb +  
②organ system +  
②tail +



MA term:	<b>brain</b>
MA id:	<b>MA:0000168</b>
Number of paths to term:	<b>3</b>

multiple hierarchies

- spatial representation
- “system” representation



## Anatomical Dictionary for the Adult Mouse

- expanded list of terms (>2400 unique terms)
- no cell types, except 'unfertilized egg'
- multiple pathways to term (ie. > 1 parent term), with both 'is-a' and 'part-of' relationships
- no links to expression results

## Future plans:

- Expand list of terms
- Edit hierarchies
- Include synonyms
- Provide definitions
- Integrate with developmental AD in order to anatomically represent entire lifespan of mouse
- Formally incorporate into the MGI database – associate existing expression data for TS28
- Annotate additional expression data – by GXD editors and others
- Associate with other types of biological data – consider using orthogonal vocabularies

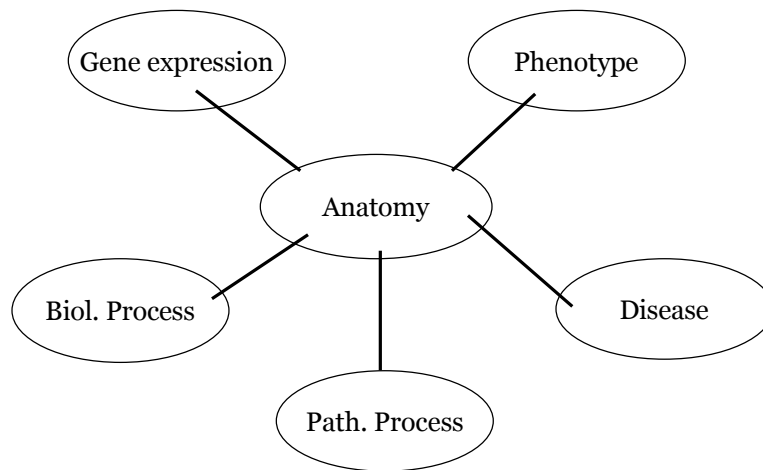
## “Issues” to deal with

- Species-specific structures
  - eg. “tail”
- Species-specific ‘orientation’ issues
  - eg. front/back, anterior/posterior

## “Ideas”

- Refine ‘part-of’ relationship:
  - ‘regional part-of’
  - ‘constitutional part-of’
  - ‘systemic part-of’

# Anatomical Ontologies



Standardized Representation and Integration of Biological Data