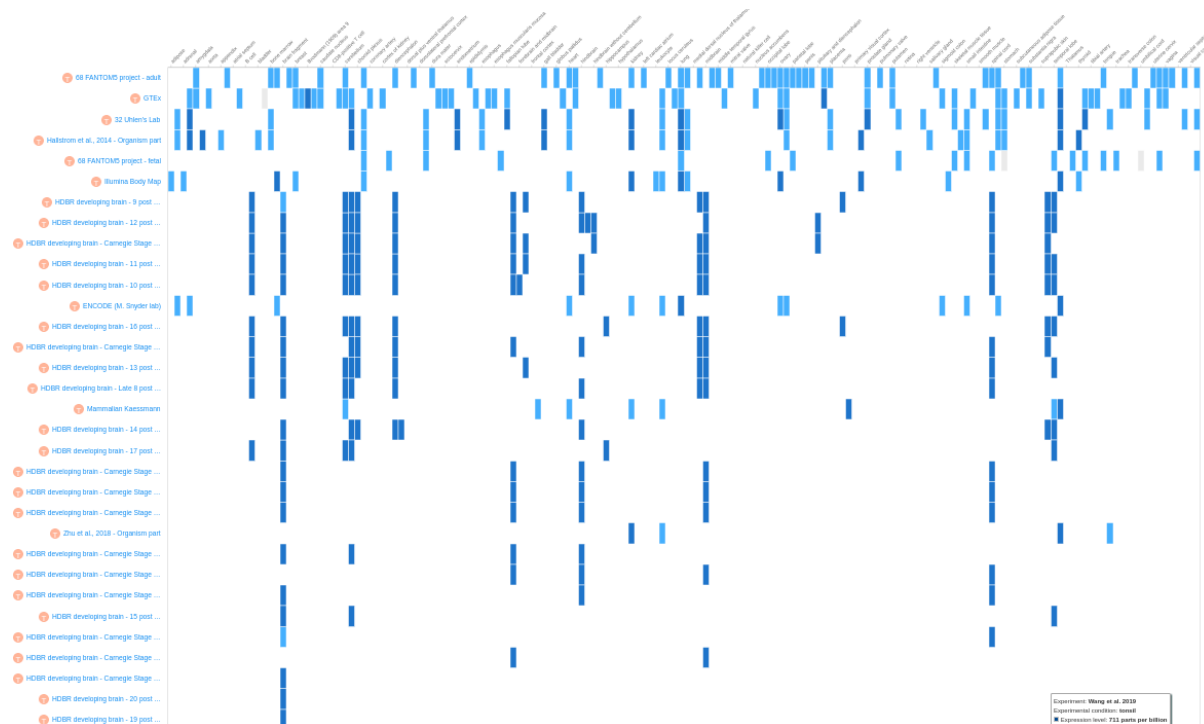


TOPIC 6: PRACTICAL ASSESSMENT

Finally, it is time that you apply all what you have learned on this practical to take a closer look on your own at the *ARL6* gene. Use the database *Expression Atlas* to describe the basal expression of this gene and to list under which conditions this gene is expressed differentially. Include the conditions where the gene shows the highest up and down regulation (as per Log2-FC).

Summarize and discuss your findings individually. You can include both text and images/screenshots. (Present it in PDF file)

ARL6 Gene



(Expression Atlas: ARL6 Gene)

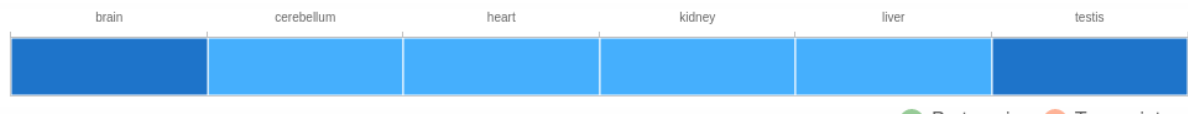
Definition

The basal expression of a gene refers to the minimum or “baseline” level of expression in a particular cell type or tissue under normal, non-stimulated conditions. It represents the level of gene expression that is typically observed in the absence of specific signals or stimuli that would upregulate or downregulate the gene.

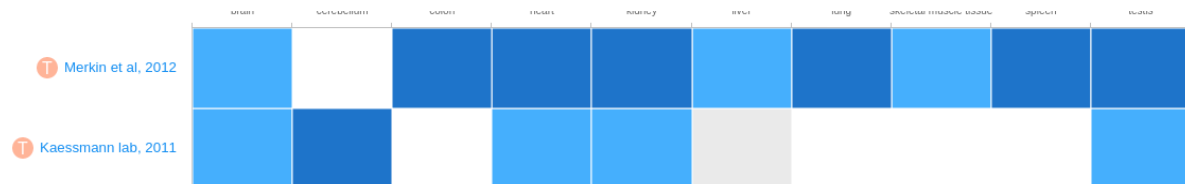
Experiments: Where is this gene more expressed?

We have 65 experiments recorded in the human database, the gene is present in lot of organism parts. In other organisms we have different results that show us interesting information about the expression of this gene as it could be:

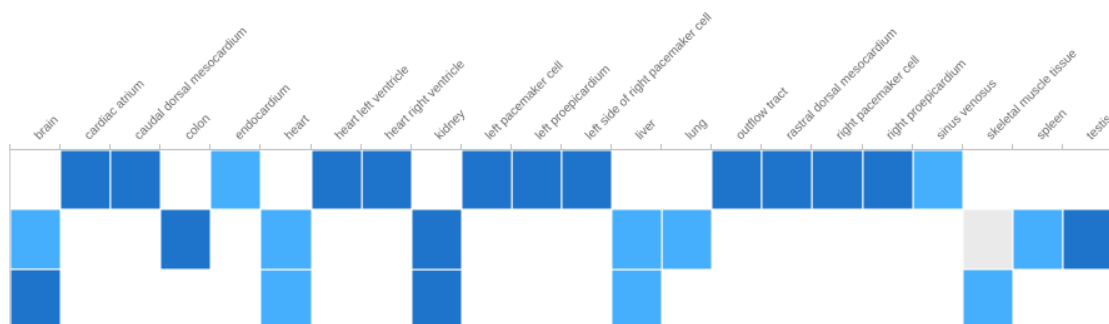
The monodelphis domestica:



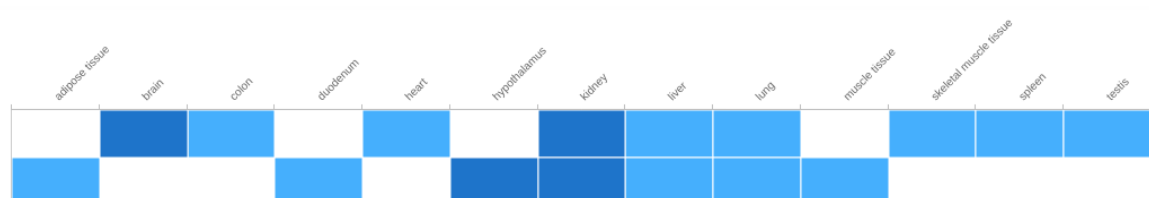
The maccaca mulata:



The gallus gallus:



The bos taurus:



Seeing these results (and the ones from other species similar to the ones mentioned prior) we can extrapolate that the gene ARL6 is expressed mostly in parts such as the kidney, the brain or the testis. Either way, those are regions where the gene is highly expressed.

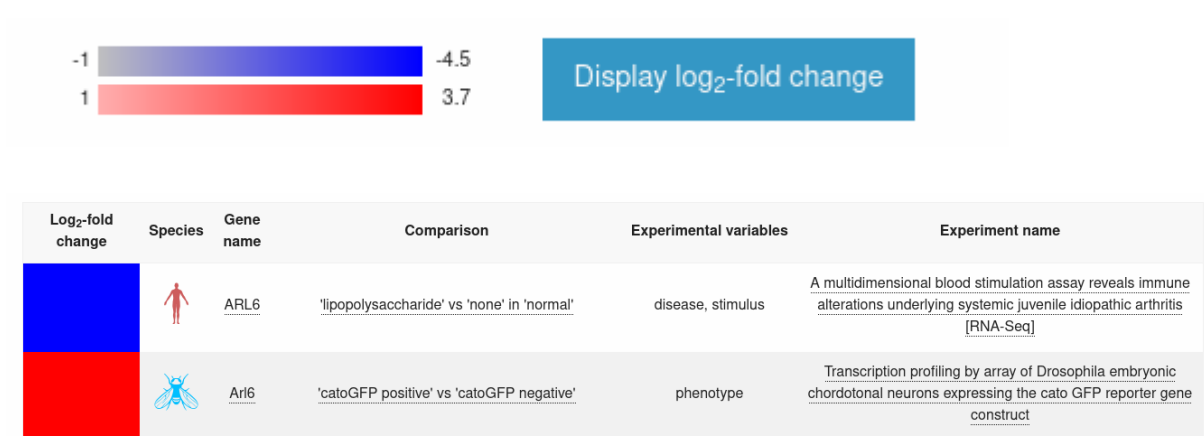
The ARL6 is expressed in numerous other organs, so:

What are the conditions where the gene is expressed differently?

Well, after further investigation with the Expressions Atlas I have found that it exhibits varying levels of expression, with high upregulation and downregulation values observed under specific experimental conditions, such as:

- Disease states such as:
-Breast carcinoma or Pancreatic adenocarcinoma.
- Different phenotypes, whether catoGFP positive or negative.
- Sampling time points, particularly at time point 4 for two different treatment scenarios.
- Distinct organism parts, such as campaniform neuron or normal neuron.
- Exposure to the stimulus of lipopolysaccharide.

If we specifically talk about the highest up and down regulation cases were this gene is expressed we find that:



	Value(Log2-FC)	Experimental Variable	Organism
Upregulation	-4.5	Disease and/or stimulus.	Drosophila Melanogaster(Embryonic chordotonal)
Downregulation	3.7	Phenotype	Homo Sapiens